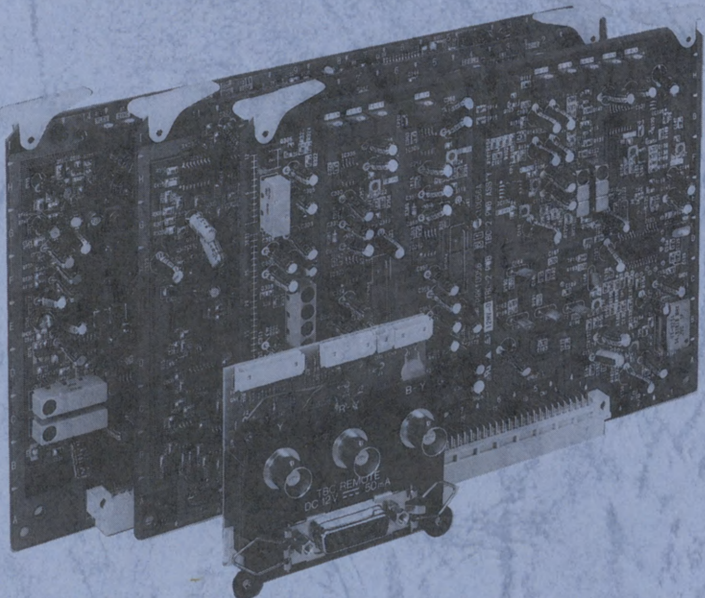
JVC

SERVICE MANUAL

TIME BASE CORRECTOR BOARDS

SA-T22U



SPECIFICATIONS

COMPORNENTS

TBC-1 Printed wire board x 1
TBC-2 Printed wire board x 1
TBC-3 Printed wire board x 1
Remote Control board x 1

VIDEO (TBC only)

Signal process	: Component (Y/R-Y/B-Y = 4 : 2 : 2)
Sampling rate	: 8 bit
Sampling frequency	: Y: 14.3 MHz C: 7.16 MHz
Correction range	: 1 field
S/N ratio	: 56 dB PP/RMS
Jitter	: Y: ±15μsec C: ±2° Y/R-Y/B-Y: ±15 nsec
Frequency responce	: Y: 3 MHz, ±0.5 dB, 6 MHz: +0/–3 dB C: 3.58 MHz ±1.5 MHz +0/–3 dB Y/R-Y/B-Y: 2.0 MHz +0/–3 dB
Output	: Y: 1.0 Vp-p, 75 ohms, unballanced R-Y/B-Y: 0.486 Vp-p, 75 ohms, unballanced (LOW/MII)/0.7 Vp-p, 75 ohms, unballanced (HIGH/β cam) selectable by menu.
Power consumption	: 20 watts

Remote connector

No	Signal	No	Signal	No	Signal
1	FG	6	CHROMA PHASE	11	FREEZE EN
2	+12V	7	SET UP LEVEL	12	RSVD CTL 1
3	GND	8	RSVD DC 1	13	RSVD CTL 2
4	VIDEO LEVEL	9	RSVD DC 2	14	OPERATE
5	CHROMA LEVEL	10	REMOTE EN	15	GENLOCK

1 9251

No. 9251
March 1992

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▓) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

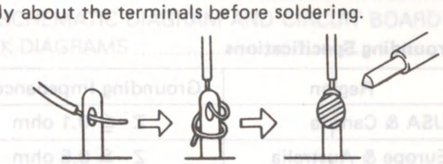


Fig. 1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10–15 kg of force in any direction will not loosen it.

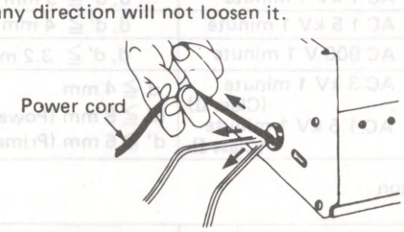


Fig. 2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

    1) **Connector part number :** E03830-001
    2) **Required tool :** Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

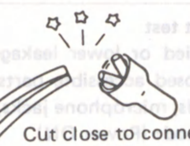


Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.



Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

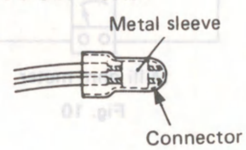


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

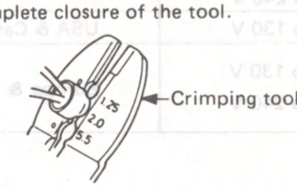


Fig. 6

(5) Check the four points noted in Fig. 7.

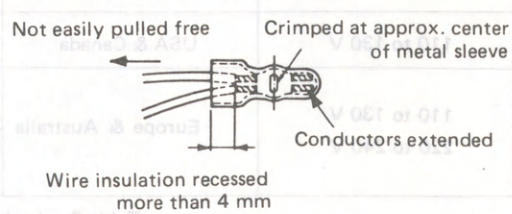


Fig. 7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test
Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test
Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance
When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

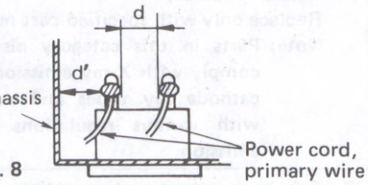


Fig. 8

4. Leakage current test
Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
Measuring Method: (Power ON)
Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts.
Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

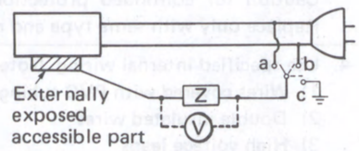


Fig. 9

5. Grounding (Class I model only)
Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).
Measuring Method:
Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

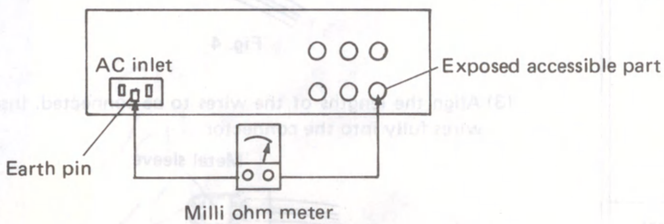


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	—	AC 900 V 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ /500 V DC	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 µF, 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

TABLE OF CONTENTS

To install and to remove the SA-T22U, consult your JVC dealer.

Time Base Corrector Boards SA－T22U

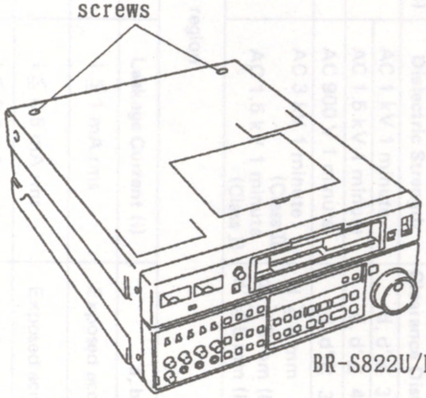
The SA-T22U Time Base Corrector Boards is designed specifically for installation in JVC BR-S822U/BR-S622U Professional-S VTR's.

FEATURES

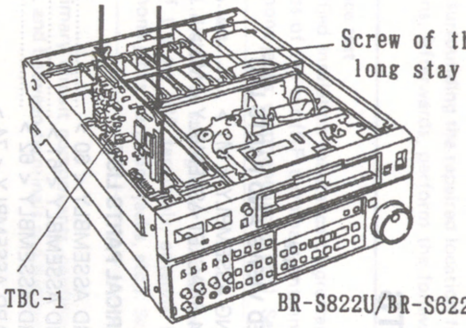
- High picture quality thanks to component signal(Y/R-Y/B-Y) processing with sampling rete of 4:2:2 and an 8-bit quantization for each Y and C signal.
- Component signal(Y/R-Y/B-Y) output of M Ⅱ or Bcam level selectable.
- Remote control capability.(Maximum cable length is 5 m)
- Built-in field memory allowing a wide range of compensation.

INSTALLATION OF SA-T22U

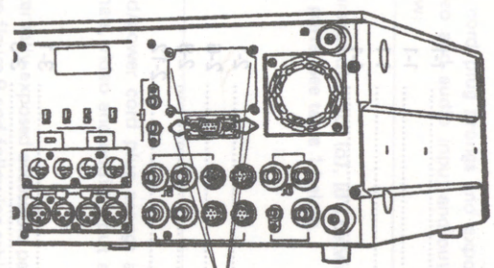
1. Set the power switch of the BR-S822U/BR-S622U to OFF.
   Please do not touch a control of the SA-T22U.
   Remove two screws from the top panel of the VTR to remove the top panel.



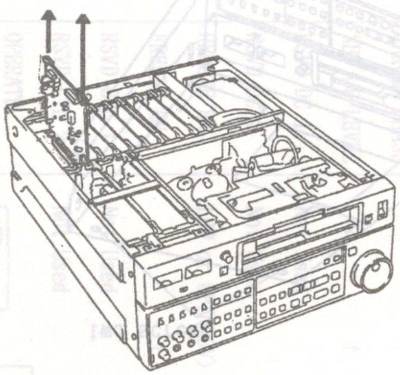
2. Remove screw from the short stay to dettach the short stay and insert the TBC-1 printed wire board firmly as a illustration.
   Push the left and right levers on the upper side of the TBC-1.
   Then secure the short stay with the screw.



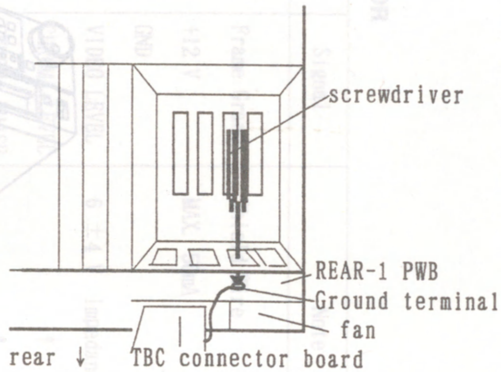
3. Remove the four screws from the blank panel and remove the blank panel.



4. Loosen screws from the long stay to dettach the long stay and remove the OUTPUT PWB and Y COMB PWB to make a room for screw-driver to work. Locate a braos screw underneath the fan.
Loosen it off out of the REAR-1 BOARD, put it back on together with the ground terminal of the TBC connector board.

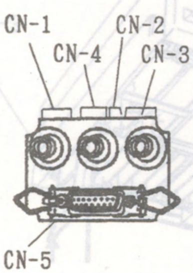


BR-S822U/BR-S622U



Top view of the BR-S822U/BR-S622U

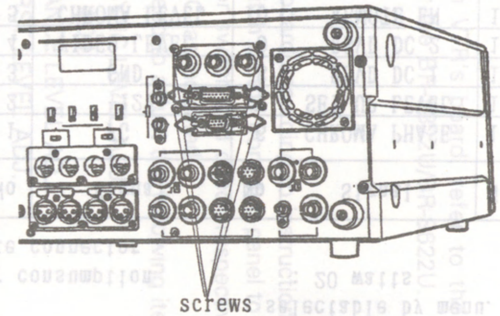
5. Attach the connectors to the CONNECTOR BOARD, Set the board so that the remote terminal's pin side faces the inside the unit.
Make connections from connections from CN-5 first, then CN-1 to CN-4 in order.



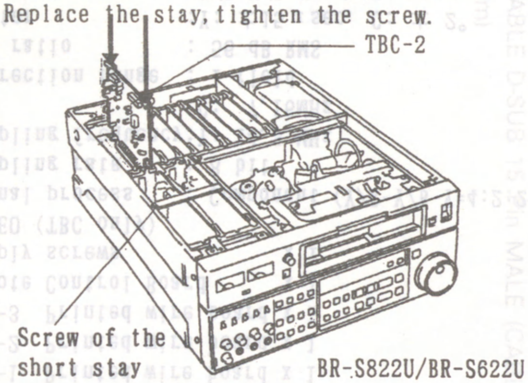
Cable No.	(Pins)	Connector
4R-1	(10)	CN-1
4R-2	(2)	CN-2
4R-3	(6)	CN-3
4R-4	(8)	CN-4
4R-5	(4)	CN-5

6. Insert OUTPUT PWB and Y COMB PWB back into the slot.

7. Attach the SA-T22U's CONNECTOR BOARD to the rear panel with four screws.

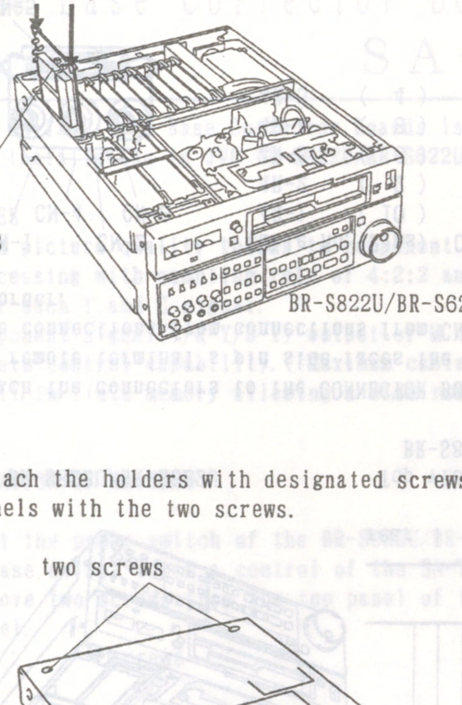


8. Insert the TBC-2 printed wire board firmly as a illustration.
Push the left and right levers on the upper side of the TBC-2.
Replace the stay, tighten the screw.

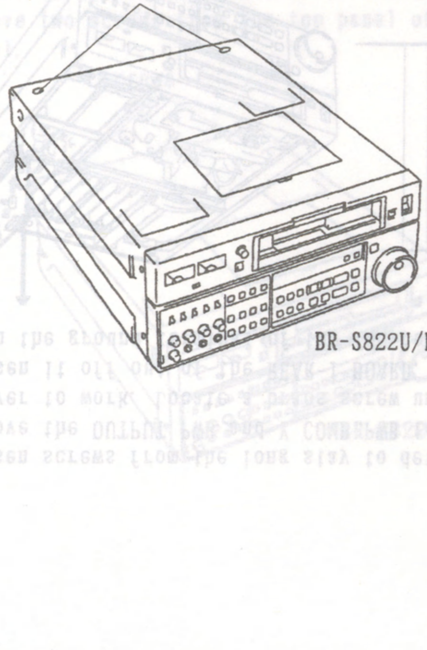


BR-S822U/BR-S622U

9. Insert the TBC-3 printed wire board firmly as a illustration.
Push the left and right levers on the upper side of the TBC-3.
Then secure the long stay with the screw.



10. Attach the holders with designated screws and replace the top panels with the two screws.



OPERATION

- Refer the BR-S822U/BR-S622U instructions.

SPECIFICATIONS

- COMPONENTS
  - TBC-1 Printed wire board x 1
  - TBC-2 Printed wire board x 1
  - TBC-3 Printed wire board x 1
  - Remote Control Board x 1
  - Supply screws x 1
- VIDEO (TBC only)
  - Signal process : Component (Y/R-Y/B-Y=4:2:2)
  - Sampling rate : 8 bit
  - Sampling frequency: Y: 14.3 MHz
C: 7.16MHz
  - Correction range : 1 field
  - S/N ratio : 56 dB RMS
  - Jitter : Y: ±15 μsec, C: ± 2°
Y/R-Y/B-Y: ±15n sec
  - Frequency responce: Y: 3 MHz ±0.5 dB, 6MHz: +0/-3dB
C: 3.58 MHz±1.5MHz +0/-3dB
Y/R-Y/B-Y: 2.0MHz +0/-3dB
  - Output Y: 1.0V $_{P-P}$, 75 ohms, unballanced
R-Y/B-Y: 0.486 V$_{P-P}$, 75 ohms, unballanced (MII/LOW)
/0.7V $_{P-P}$, 75 ohms, unballanced (Bcam/HIGH)
selectable by menu.
  - Power consumption : 20 watts
  - Remote connector

No	Signal	No	Signal	No	Signal
1	FG	6	CHROMA PHASE	11	FREEZE EN
2	+12V	7	SET UP LEVEL	12	RSVD CTL 1
3	GND	8	RSVD DC 1	13	RSVD CTL 2
4	VIDEO LEVEL	9	RSVD DC 2	14	OPERATE
5	CHROMA LEVEL	10	REMOTE EN	15	GENLOCK

SECTION 1
GENERAL DESCRIPTION

1.1 INTRODUCTION

SA-T22U is a T.B.C. board (Time Base Corrector Board) for exclusive use of the video cassette recorder BR-S822U/BR-S622U.
For connection with VTR's board, refer to the service manual No. 9246 for the BR-S822U/BR-S622U.

1.2 SETUP

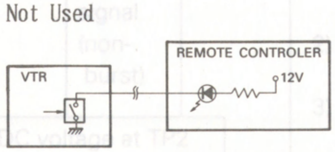
1) Install the T.B.C. board according to instructions.
2) Set the T.B.C. switch on the front sub panel to ON.
3) Turn on the power switch and check respective levels related to the T.B.C. as indicated.
4) If necessary, proceed to adjust the following items.

 a. OUTPUT Y & SYNC LEVEL ADJ.
 b. COLOR LEVEL ADJ.
 c. CARRIER BALANCE LEVEL ADJ.
 d. ENCODER BURST LEVEL ADJ.
 e. ENCODER COLOR LEVEL & PHASE ADJ.
 f. T.B.C. MODE COMPONENT Y LEVEL ADJ.
 g. T.B.C. MODE Y/R-Y PHASE ADJ.
 h. T.B.C. MODE Y/B-Y PHASE ADJ.
 i. T.B.C. MODE COMPONENT COLOR LEVEL ADJ.

 * See Section 2

1.3 REMOTE CONNECTOR

	Pin No.	Signal	Note
POWER, GND	1	Frame Grand	Shield Wire
〃	2	+12 V	MAX. 50mA
〃	3	GND	
DC ADJUST	4	VIDEO LEVEL	6 ±4 V Impedance 5K Ω~50K Ω
〃	5	CHROMA LEVEL	↑
〃	6	CHROMA PHASE	↑
〃	7	SET UP LEVEL	↑
〃	8	RSVD DC 1	Not Used
〃	9	RSVD DC 2	Not Used
CONTROL	10	REMOTE EN	LOW or OPEN(5V) LOW ACTIVE
〃	11	FREEZE EN	↑
〃	12	RSVD CTL 1	Not Used
〃	13	RSVD CTL 2	Not Used
LED	14	OPRATE	
〃	15	GEN LOCK	



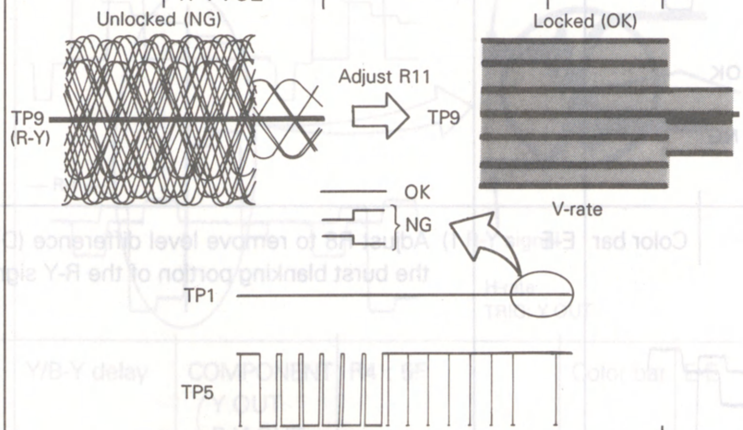
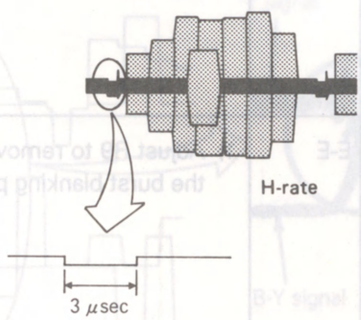
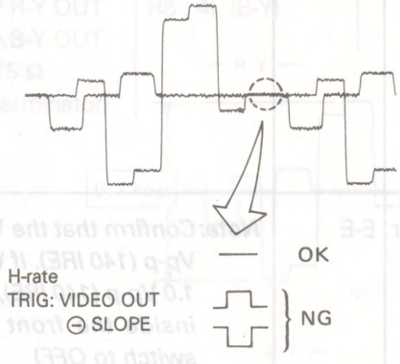
1.4 CONNECTOR & CABLE

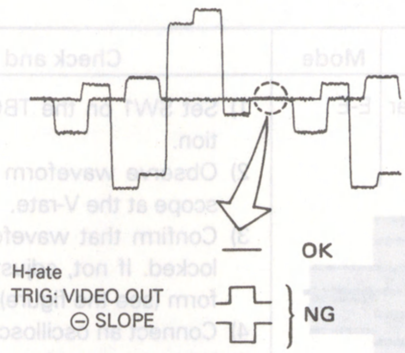
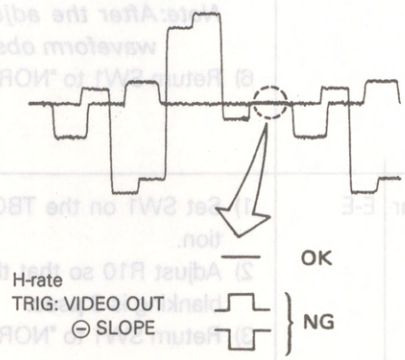
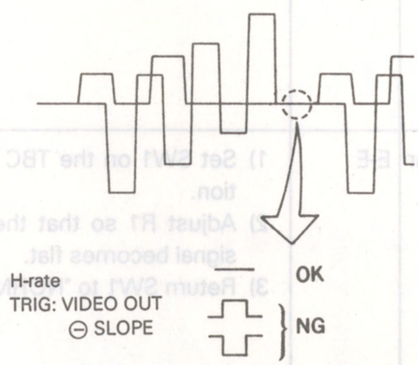
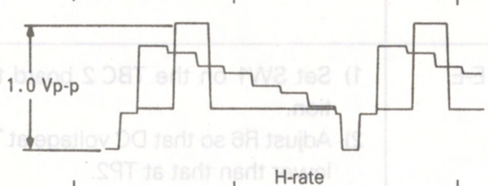
- D-SUB CONNECTOR 15 Pin FEMALE (VTR & REMOTE CONTROL)
- CABLE D-SUB 15 Pin MALE (CABLE LENGTH MAX. 5 m)

SECTION 2
ELECTRICAL ADJUSTMENT

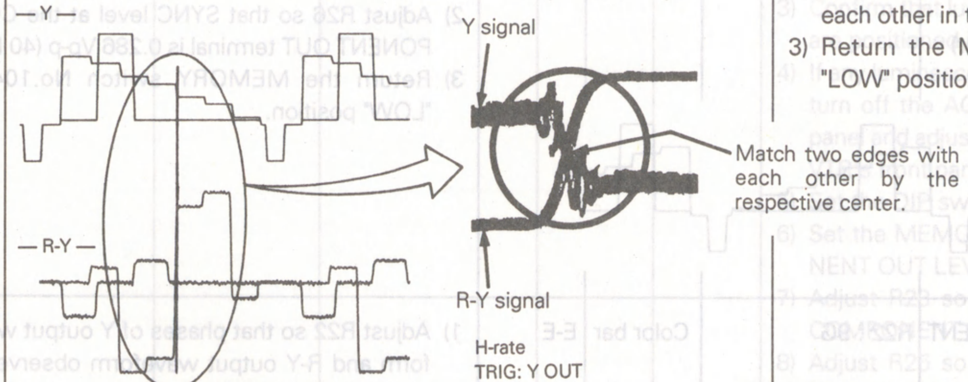
2.1 TBC 2 CIRCUIT

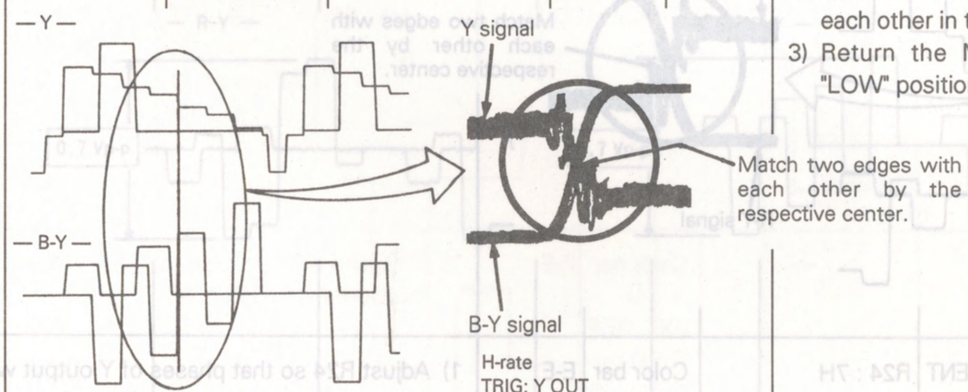
***Note:** For adjustment in this section, check points and adjustment parts are located on the TBC 2 board unless otherwise specified.*

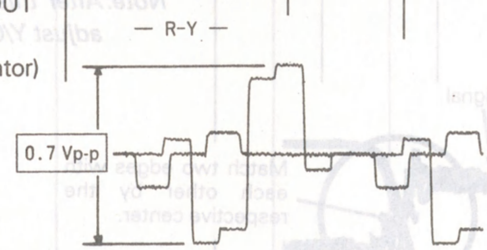
No.	Item	Check Point	Adjustment Parts	Signal	Mode	Check and Adjustment
1	Decoder APC	TP9 : 1G TP5 : 2B TP1 : 3E  	R11 : 2B	Color bar	E-E	1) Set SW1 on the TBC 2 board to "ADJ" position. 2) Observe waveform at TP9 with an oscilloscope at the V-rate. 3) Confirm that waveform observed at TP9 is locked. If not, adjust R11 to lock the waveform (see the figure). 4) Connect an oscilloscope with TP1 and TP5. 5) With the waveform at TP1 being observed, adjust R11 so that it shapes flat waveform in the V. sync position (see figure). ***Note:** After the adjustment, confirm that waveform observed at TP9 is locked.* 6) Return SW1 to "NORM" position.
2	Burst blanking	TP7 : 2C  	R10 : 3C	Color bar	E-E	1) Set SW1 on the TBC 2 board to "ADJ" position. 2) Adjust R10 so that the duration of the burst blanking is 3 μsec. 3) Return SW1 to "NORM" position.
3	Decoder reference phase	TP9 : 1G  	R1: 5I	Color bar	E-E	1) Set SW1 on the TBC 2 board to "ADJ" position. 2) Adjust R1 so that the burst portion of R-Y signal becomes flat. 3) Return SW1 to "NORM" position.
4	Color killer	TP2: 2E TP3: 2G DC voltage at TP3 : –0.4 V DC as against DC voltage at TP2	R6: 2G	5 steps signal (non-burst)	E-E	1) Set SW1 on the TBC 2 board to "ADJ" position. 2) Adjust R6 so that DC voltage at TP3 is 0.4 VDC lower than that at TP2. 3) Return SW1 to "NORM" position.

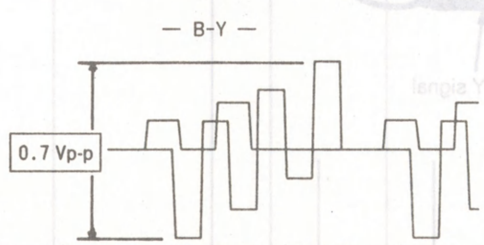
No.	Item	Check Point	Adjustment Parts	Signal	Mode	Check and Adjustment
5	Hue	TP9 : 1G 	R7 : 1F	Color bar	E-E	1) Make sure of S1 on the TBC 2 board being set to "NORM" position. 2) Adjust R7 so that the burst portion of R-Y signal becomes flat.
6	DC level difference in R-Y blanking	TP12 : 5G 	R8 : 2I	Color bar	E-E	1) Adjust R8 to remove level difference (DC) in the burst blanking portion of the R-Y signal.
7	DC level difference in B-Y blanking	TP13 : 5H 	R9 : 3I	Color bar	E-E	1) Adjust R9 to remove level difference (DC) in the burst blanking portion of the B-Y signal.
8	Component Y level	COMPONENT Y OUT (75 Ω terminator) 	R21 : 10I	Color bar	E-E	*Note: Confirm that the VIDEO OUT level is 1.0 Vp-p (140 IRE). If VIDEO OUT level is not 1.0 Vp-p (140 IRE), adjust VIDEO level VR inside the front panel. (Set the AGC switch to OFF)* 1) Set the MEMORY switch No. 104 (COMPONENT OUT LVEL) to"HIGH" position. 2) Adjust R21 to obtain 1.0 Vp-p as Y output level at the COMPONENT OUT terminal. 3) Return the MEMORY switch No. 104 to "LOW" position.

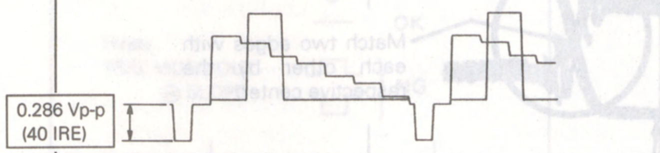
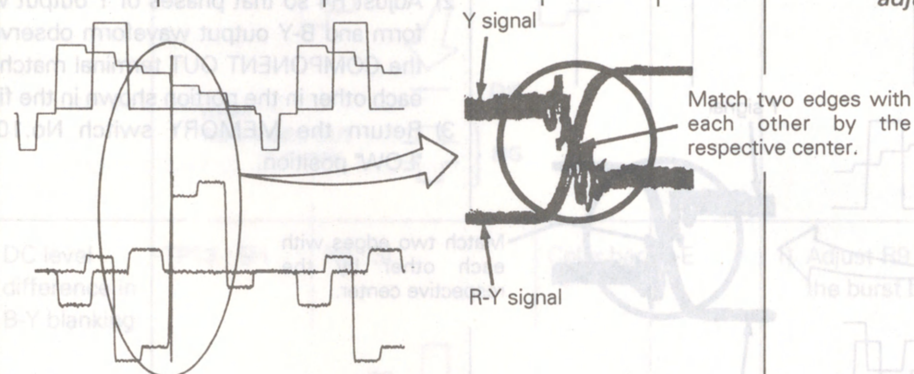
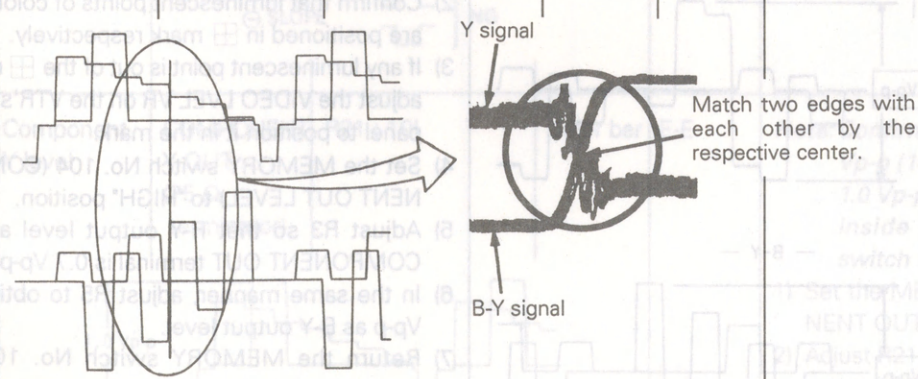
No.	Item	Check Point	Adjustment Parts	Signal	Mode	Check and Adjustment
9	Y/R-Y delay	COMPONENT (Y OUT, R-Y OUT) (75 Ω terminator)	R2 : 5F	Color bar	E-E	1) Set the MEMORY switch No. 104 (COMPONENT OUT LEVEL) to "HIGH" position. 2) Adjust R2 so that phases of Y output waveform and R-Y output waveform observed at the COMPONENT OUT terminal match with each other in the portion shown in the figure. 3) Return the MEMORY switch No. 104 to "LOW" position.
10	Y/B-Y delay	COMPONENT (Y OUT, B-Y OUT) (75 Ω terminator)	R4 : 5F	Color bar	E-E	1) Set the MEMORY switch No. 104 (COMPONENT OUT LEVEL) to "HIGH" position. 2) Adjust R4 so that phases of Y output waveform and B-Y output waveform observed at the COMPONENT OUT terminal match with each other in the portion shown in the figure. 3) Return the MEMORY switch No.104 to "LOW" position.
11	Component color level	COMPONENT (R-Y OUT, B-Y OUT) (75 Ω terminator)	R3 : 4I (R-Y) R5 : 4I (B-Y)	Color bar	E-E	1) Input the color bar signal directly to the vector scope (75Ω terminated) and adjust the GAIN control to position all dots of respecive colors in the ⊞ marking. 2) Confirm that luminescent points of color bars are positioned in ⊞ mark respectively. 3) If any luminescent point is out of the ⊞ mark, adjust the VIDEO LVEL VR on the VTR's front panel to position it in the mark. 4) Set the MEMORY switch No. 104 (COMPONENT OUT LEVEL) to "HIGH" position. 5) Adjust R3 so that R-Y output level at the COMPONENT OUT terminal is 0.7 Vp-p. 6) In the same manner, adjust R5 to obtin 0.7 Vp-p as B-Y output level. 7) Return the MEMORY switch No. 104 to "LOW" position.



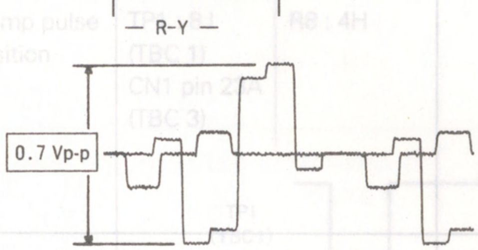


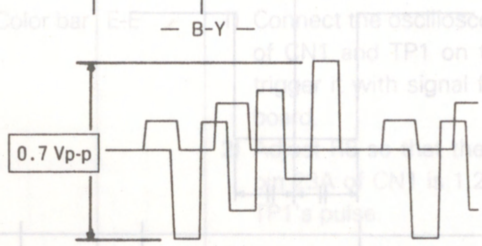




No.	Item	Check Point	Adjustment Parts	Signal	Mode	Check and Adjustment
Note:	***• For adjustment of items No. 12 and after, confirm that the TBC 1 board has been adjusted correctly.*** ***• Before proceeding to the following, turn on SW2-3 on the TBC 1 board to set for the TBC mode.***					
12	TBC mode Component SYNC level	COMPONENT Y OUT (75 Ω terminator)	R26 : 10I	Color bar	E-E	1) Set the MEMORY switch No. 104 (COMPONENT OUT LEVEL) to "HIGH" position. 2) Adjust R26 so that SYNC level at the COMPONENT OUT terminal is 0.286 Vp-p (40 IRE). 3) Return the MEMORY switch No.104 to "LOW" position. 
13	TBC mode Y/R-Y delay	COMPONENT (Y OUT / R-Y OUT) (75 Ω terminator)	R22 : 9G	Color bar	E-E	1) Adjust R22 so that phases of Y output waveform and R-Y output waveform observed at the COMPONENT OUT terminal match with each other in the portion shown in the figure. ***Note: After this adjustment, make sure to adjust Y/C timing of the TBC 1 board.*** 
14	TBC mode Y/B-Y delay	COMPONENT (Y OUT / R-Y OUT) (75 Ω terminator)	R24 : 7H	Color bar	E-E	1) Adjust R24 so that phases of Y output waveform and B-Y output waveform observed at the COMPONENT OUT terminal match with each other in the portion shown in the figure. ***Note: After this adjustment, make sure to adjust Y/C timing of the TBC 1 board.*** 

No.	Item	Check Point	Adjustment Parts	Signal	Mode	Check and Adjustment
15	TBC mode Component color level	COMPONENT (B-Y OUT R-Y OUT (75 Ω terminator)	R23 : 9I (R-Y) R25 : 8I (B-Y)	Color bar	E-E	1) INPUT the color bar signal directly to the vectorscope (75Ω terminated), and adjust the GAIN control to position all dots of respective colors in the ⊞ marking. 2) Set the DIP switch 2-3 of TBC-1 board to OFF. 3) Confirm that luminescent points of color bars are positioned in ⊞ mark respectively. 4) If any luminescent point is out of the ⊞ mark, turn off the AGC switch on the VTR's front panel and adjust the VIDEO LEVEL VR (on the VTR's front panel) to position it in the mark. 5) Set the DIP switch 2-3 to ON. 6) Set the MEMORY switch No. 104 (COMPONENT OUT LEVEL) to "HIGH" position. 7) Adjust R23 so that R-Y output level at the COMPONENT OUT terminal is 0.7 Vp-p. 8) Adjust R25 so that B-Y output level at the COMPONENT OUT terminal is 0.7 Vp-p. 9) Return the MEMORY switch No.104 to "LOW" position.

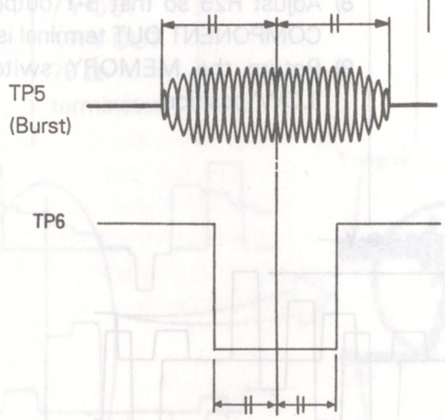




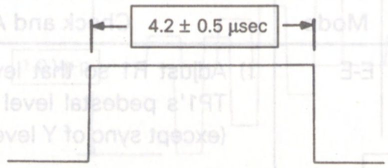
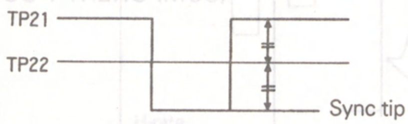
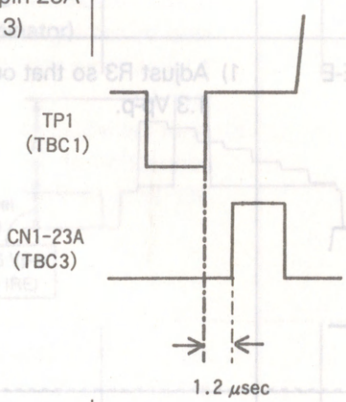
2.2 TBC 3 CIRCUIT

Note: • *Unless otherwise indicated, all check points and adjustment parts are located on the TBC 3 board.*
• *For check and adjustment of this circuit, supply a signal synchronized with the signal which will be inputted to the VIDEO IN terminal to the EXT. REF IN terminal of the VIDEO LINE IN connector with 75 Ω terminator.*
• *Do not disturb VRs of R3, R5, R10 R11 and R12 since they have no need of adjustment in this section.*

No.	Item	Check Point	Adjustment Parts	Signal	Mode	Check and Adjustment
1	Decoder APC frequency	TP50 : 3H ⇩ Frequency counter TP50 : 3.579545 MHz ± 5 Hz	R1 : 1H	Color bar ⇩ EXT. REF (75 Ω terminated)	E-E	1) Set SW1-1 on the TBC 3 board to ON. 2) Adjust R1 so that frequency at TP50 becomes 3.579545 MHz. 3) Return SW1-1 to OFF.
2	Burst flag mask pulse position	TP5 : 1E TP6 : 1G	R2 : 2H	Color bar ⇩ EXT. REF (75 Ω terminated)	E-E	1) With an oscilloscope, observe waveforms of pulse at TP6 and burst at TP5. 2) Adjust R2 to coincide respective centers of the burst and the pulse with each other in the waveforms.
3	Color killer	TP9 : 2E ⇩ Digital voltmeter	—	Color bar ⇩ EXT. REF (75 Ω terminated)	E-E	1) Measure DC voltage at TP9 (regard the measured voltage as "A").
				5 steps (non-burst) ⇩ EXT. REF (75 Ω terminated)	E-E	2) With input of 5 steps signal, measure DC voltage at TP9 (regard the measured voltageas "B").
		TP8 : 2D ⇩ Digital voltmeter	R4 : 7E	Color bar ⇩ EXT. REF (75 Ω terminated)	E-E	3) Adjust R4 so that DC voltage measured at TP8 is centered between "A" and "B".

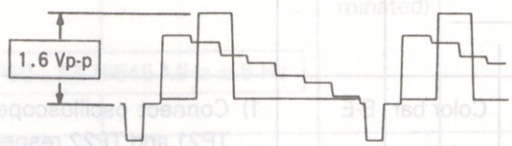
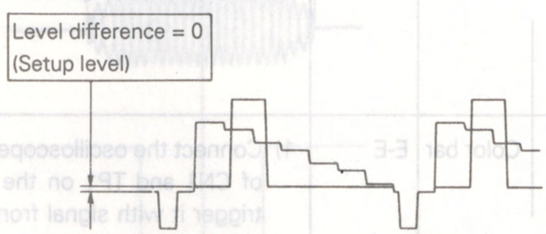
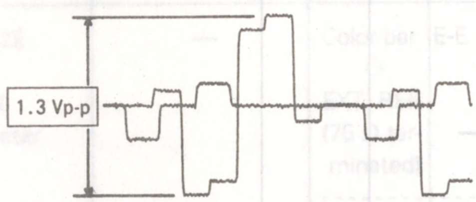
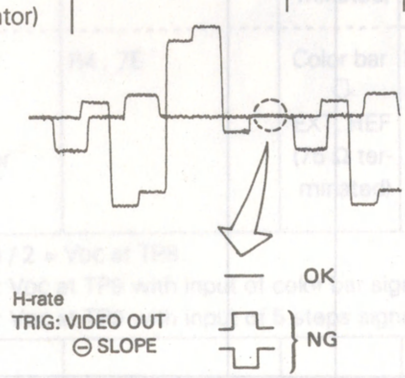


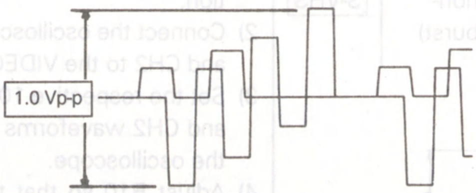
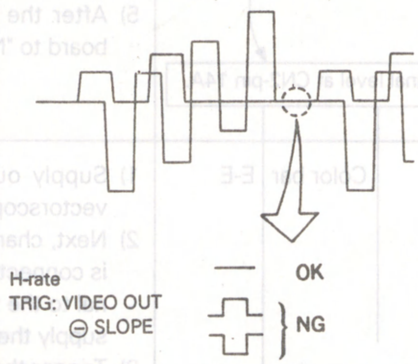
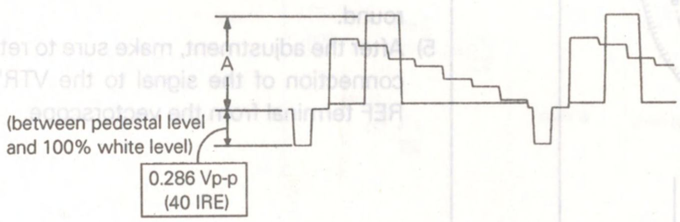
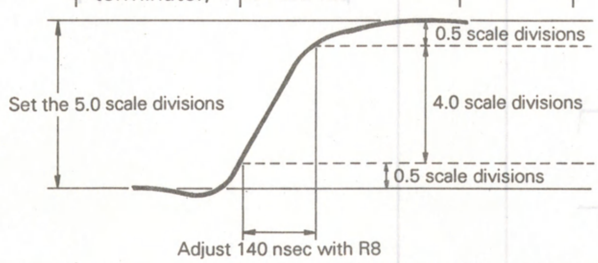
(B+A) / 2 = VDC at TP8
A : VDC at TP9 with input of color bar signal
B : VDC at TP9 with input of 5 steps signal

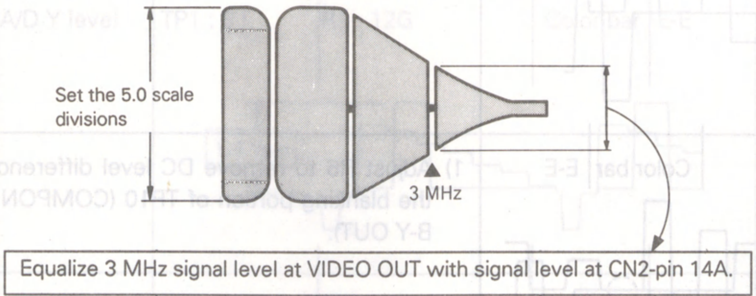
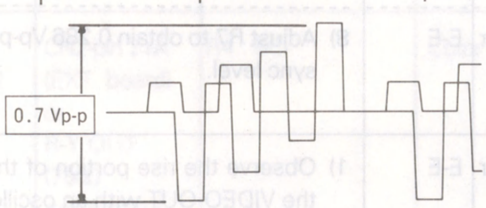
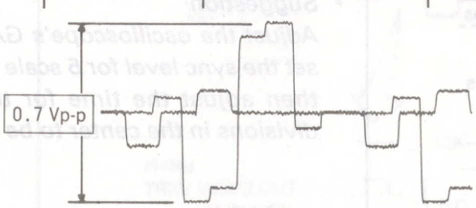
No.	Item	Check Point	Adjustment Parts	Signal	Mode	Check and Adjustment
4	Half killer pulse width	TP26 : 7H	R7 : 7I	Color bar	E-E	1) Adjust R7 so that pulse width measured at TP26 is 42 µsec in duration. 
5	2nd sync separation level	TP21 :10G TP22 :10F	R5 : 10G	Color bar	E-E	1) Connect oscilloscope's CH1 and CH2 with TP21 and TP22 respectively. *Note: Set the oscilloscope's measuring range and GND level to be the same for CH1 and CH2.* 2) Adjust R5 to position TP22's DC level in the center of TP21's sync level. *Note: Make sure that the oscilloscope is set to DC range for both CH1 and CH2.* 
6	Clamp pulse position	TP1 : 8 I (TBC 1) CN1 pin 23A (TBC 3)	R8 : 4H	Color bar	E-E	1) Connect the oscilloscope's probes to pin 23A of CN1 and TP1 on the TBC 1 board while trigger it with signal from TP1 on the TBC 1 board. 2) Adjust R8 so that the rise of the pulse from pin 23A of CN1 is 1.2 µsec after the sync of TP1's pulse. 
7	VCO voltage	TP48 : 6C	L1 : 6B	Color bar	E-E	1) Adjust L1 so that voltage at TP48 is 0 VDC.

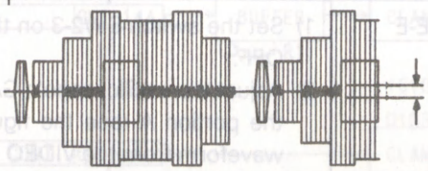
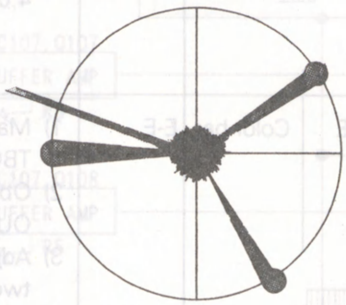
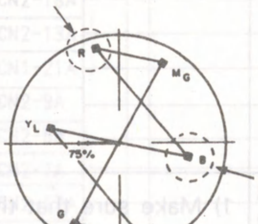
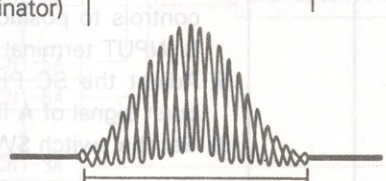
2.3 TBC 1 CIRCUIT

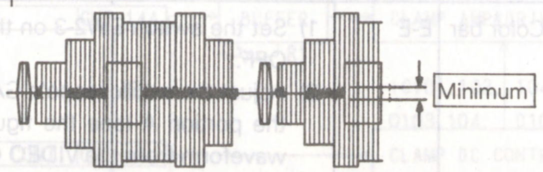
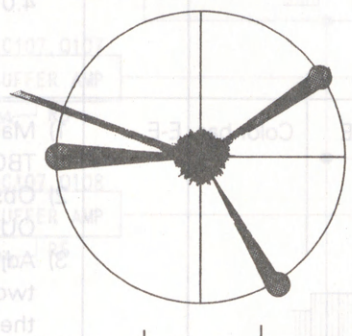
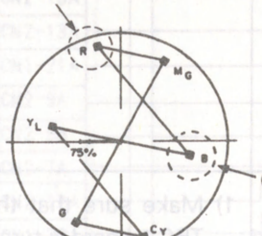
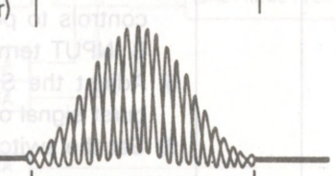
Note: • *Unless otherwise indicated, all check points and adjustment parts are located on the TBC 1 board.*
• *For check and adjustment of this circuit, supply a signal synchronized with the signal which will be inputted to the VIDEO IN terminal to the EXT. REF IN terminal of the VIDEO LINE IN connector with 75 Ω terminator.*
• *Adjust this circuit with SW2-3 on the TBC 1 board being set ON. After adjustment, make sure to turn it off.*
• *Adjust this circuit with MEMORY switch No. 104 (COMPONENT OUT LEVEL) set "HIGH". After adjustment, make sure to turn it "LOW".*

No.	Item	Check Point	Adjustment Parts	Signal	Mode	Check and Adjustment
1	A/D Y level	TP1 : 8 I	R1 : 12G	Color bar	E-E	1) Adjust R1 so that level difference between TP1's pedestal level and 100% white level (except sync of Y level) is 1.6 Vp-p. 
2	A/D Y clamp level	TP5 or COMPONENT Y OUT (75 Ω terminator)	R2 : 7 I	Color bar	E-E	1) Adjust R2 so that the set up level of TP5 (COMPONENT Y OUT) becomes 0 Vp-p. 
3	A/D R-Y level	TP2 : 6C	R3 : 7B	Color bar	E-E	1) Adjust R3 so that output (R-Y level) at TP3 is 1.3 Vp-p. 
4	A/D R-Y clamp level	CN2-pin 21A (EXT. board) or R-Y OUT (75 Ω terminator)	R4 : 5C	Color bar	E-E	1) Adjust R4 to remove DC level difference in the blanking portion of CN2-pin 21A (COMPONENT R-Y OUT). 

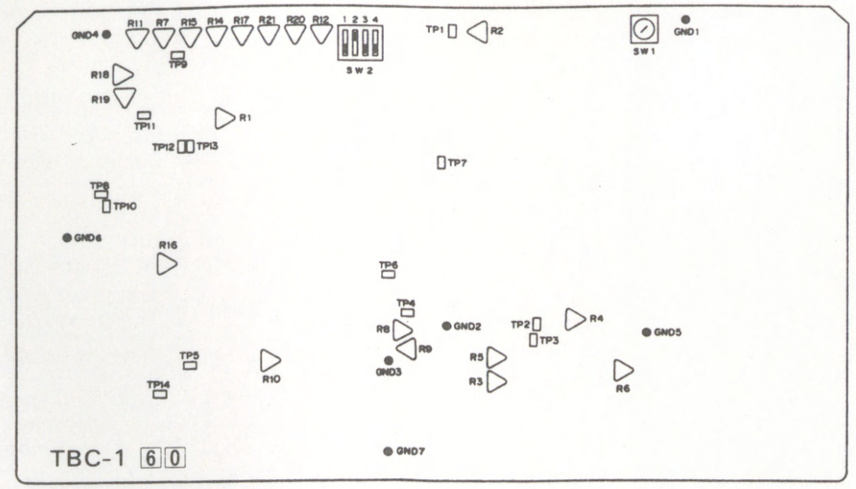
No.	Item	Check Point	Adjustment Parts	Signal	Mode	Check and Adjustment
5	A/D B-Y level	TP3 : 6C	R5 : 7B	Color bar	E-E	1) Adjust R5 so that output (B-Y level) at TP3 is 1.0 Vp-p.
						
6	A/D B-Y clamp level	TP10 : 14E or COMPONENT B-Y OUT (75 Ω terminator)	R6 : 5B	Color bar	E-E	1) Adjust R6 to remove DC level difference in the blanking portion of TP10 (COMPONENT B-Y OUT).
						
7	Y output level	CN1 pin 5A Y/C358 Y OUT (75 Ω terminator)	R9 : 8C R11 : 14 I	Color bar	E-E	1) Set teh VIDEO LEVEL switch inside the front panel to "VAR" position, and adjust the voltage at pin 5A of CN1 to be 5 VDC with the VIDEO LEVEL VR. 2) Set the DIP switch 2-3- of TBC-1 to OFF. 3) Adjust the oscilloscope's GAIN control so that level "A" of Y/C358 Y OUT becomes 6.0 scale divisions on the scope. 4) Set the DIP switch 2-3 to ON. 5) Adjust R9 so that level "A" of Y/C358 Y OUT becomes 6.0 scale divisions. 6) Set the VIDEO LEVEL switch inside the front panel to "UNITY" position. 7) Adjust R11 so that level "A" of Y/C358 Y OUT becomes 6.0 scale divisions.
						
		VIDEO OUT (75 Ω terminator)	R7 : 13 I	Color bar	E-E	8) Adjust R7 to obtain 0.286 Vp-p (40 IRE) as the sync level.
8	Sync rise-up time	TP5 : 12B or VIDEO OUT (75 Ω terminator)	R8 : 8C	Color bar	E-E	1) Observe the rise portion of the waveform at the VIDEO OUT with an oscilloscope. 2) Adjust R8 to set the rise-up time of the sync signal to be 140 nsec in the portion between 10% and 90% (A). • *Suggestion* ***Adjust the oscilloscope's GAIN control to set the sync level for 5 scale divisions, and then adjust the time for the four scale divisions in the center to be 140 nsec.***
						

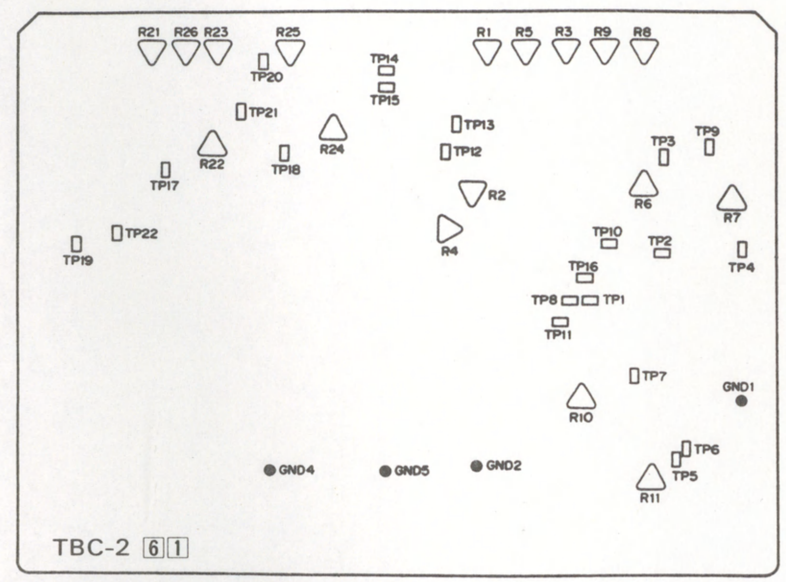
No.	Item	Check Point	Adjustment Parts	Signal	Mode	Check and Adjustment
9	Y output frequency response	CN2-pin 14A (EXT. board) TP5 : 12B	R10 : 11C	Sweep (non-burst)	E-E S-VHS	1) Set S2 on the Y COMB board to "B/W" position. 2) Connect the oscilloscope's CH1 probe to TP5 and CH2 to the VIDEO OUT terminal. 3) Set the respective 100 kHz levels of the CH1 and CH2 waveforms for 5 scale divisions on the oscilloscope. 4) Adjust R10 so that the 3 MHz level of the signal from the VIDEO OUT is equal to the signal level (3 MHz) at CN2-pin 14A. 5) After the adjustment, S2 on the Y COMB board to "NOR" position.
						
10	SC frequency	VIDEO OUT (with 75 Ω terminator) ⇩ Vectorscope	R12 : 10 I	Color bar	E-E	1) Supply output from the VIDEO OUT to a vectorscope. 2) Next, change destination of the signal which is connected to the VTR's EXT. REF IN terminal to the vectorscope's B INPUT terminal to supply the signal. 3) Trigger the vectorscope externally (B INPUT) and the waveform revolves round on the screen. 4) Stop revolving of the waveform with R12. Note: If revolution of the waveform does not stop by turning of R12, readjust R12 so that it takes more than 5 seconds for a revolging round. 5) After the adjustment, make sure to return the connection of the signal to the VTR's EXT. REF terminal from the vectorscope.
						
11	Color level	CN2 pin 21A	R15 : 13 I	Color bar	E-E	1) Adjust R15 so that output level (R-Y level) at pin 21A of CN2 is 0.7 Vp-p.
						
		CN2 pin 22A	R16 : 13D	Color bar	E-E	2) Adjust R16 so that output level (B-Y level) at pin 22A of CN2 is 0.7 Vp-p.
						

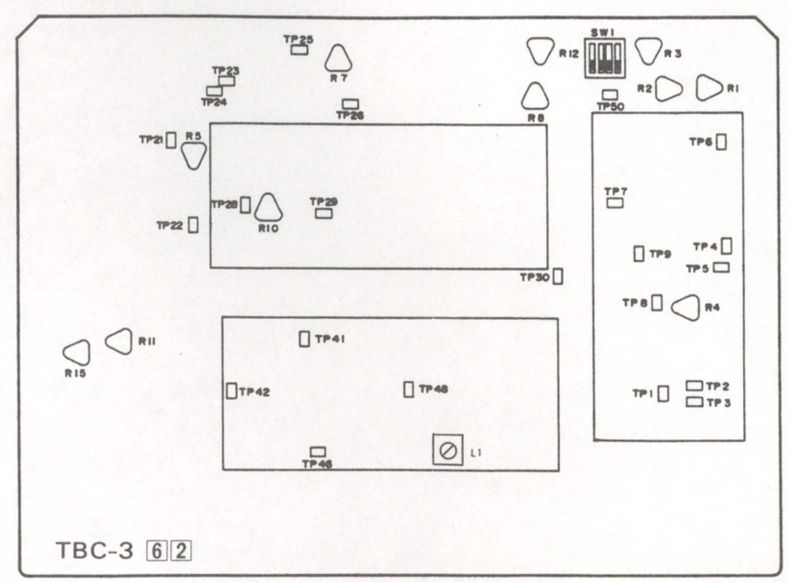
No.	Item	Check Point	Adjustment Parts	Signal	Mode	Check and Adjustment
12	Carrier balance	Y/C 358 C OUT (75 Ω terminator) 	R20 : 11 I R21 : 11 I	Color bar	E-E	1) Confirm that burst level is about 3.0 Vp-p. 2) Adjust R20 and R21 so that carrier leak is minimum at the Y/C 358 C OUT terminals. ***Note: Adjust R20 and R21 alternately to obtain minimum carrier leak.*** 3) Connect a vectorscope with the VIDEO OUT terminal, and adjust R20 and R21 to position the central luminous center at the center of the vectorscope screen.
13	Encoded burst level ***Note: If there is no scale on the vectorscope's –(B-Y) axis, measure the radius of the scope circle with a ruler to compare playback burst level of signal recorded by the set with level of the input color bar signal for adjustment with R18.***	VIDEO OUT (75 Ω terminator) ⇩ Vectorscope 	R18 : 14H	Color bar	E-E	***Note: Before starting adjustment, turn R19 full clockwise.*** 1) Input the color bar signal directly to the vectorscope (75Ω terminated), and adjust the GAIN control to position the burst level at the 0 dG point on the –(B-Y) axis. 2) Next, input the color bar signal to the VIDEO IN terminal while connect the VIDEO OUT terminal with the vectorscope. 3) Adjust R18 to position the burst level at the 0 dG point on the vectorscope.
14	Encoded color level	VIDEO OUT (75 Ω terminator) ⇩ Vectorscope 	R14 : 12 I (R-Y) R17 : 12 I (B-Y) (TBC 1) R7 : 1F (PHASE) (TBC 2)	Color bar	E-E	1) INPUT the color bar signal directly to the vectorscope (75Ω terminated), and adjust the GAIN control to position all dots of respective colors in the ⊞ marking. 2) Set the DIP switch 2-3 of TBC-1 board to OFF. 3) Confrim that luminescent points of color bars are positioned in ⊞ mark respectively. 4) If any luminescent point is out of the ⊞ mark, turn off the AGC switch on the VTR's front panel and adjust the VIDEO LEVEL VR (on the VTR's front panel) to position it in the mark. 5) Set the DIP switch 2-3 to ON. 6) Temporarily adjust R14 to position the Red signal in the specified point (⊞marking). 7) Temporarily adjust R17 to position the blue signal at the specified level (⊞marking). 8) Adjust R14, R17 (TBC 1 board) and R7 (TBC 2 board) to position all dots of respective colors in the ⊞ markings.
15	Y/C timing	VIDEO OUT (75 Ω terminator) 	SW1 : 4 I	Pulse & bar	E-E	1) Set SW1 to simmetrize the modulated 12.5T pulse in the base of the waveform possibly.

No.	Item	Check Point	Adjustment Parts	Signal	Mode	Check and Adjustment
12	Carrier balance	Y/C 358 C OUT (75 Ω terminator)	R20 : 11 I R21 : 11 I	Color bar	E-E	1) Confirm that burst level is about 3.0 Vp-p. 2) Adjust R20 and R21 so that carrier leak is minimum at the Y/C 358 C OUT terminals. ***Note: Adjust R20 and R21 alternately to obtain minimum carrier leak.*** 3) Connect a vectorscope with the VIDEO OUT terminal, and adjust R20 and R21 to position the central luminous center at the center of the vectorscope screen.
						
13	Encoded burst level	VIDEO OUT (75 Ω terminator) ⇩ Vectorscope	R18 : 14H	Color bar	E-E	***Note: Before starting adjustment, turn R19 full clockwise.*** 1) Input the color bar signal directly to the vectorscope (75Ω terminated), and adjust the GAIN control to position the burst level at the 0 dG point on the –(B-Y) axis. 2) Next, input the color bar signal to the VIDEO IN terminal while connect the VIDEO OUT terminal with the vectorscope. 3) Adjust R18 to position the burst level at the 0 dG point on the vectorscope.
	Note: If there is no scale on the vectorscope's –(B-Y) axis, measure the radius of the scope circle with a ruler to compare playback burst level of signal recorded by the set with level of the input color bar signal for adjustment with R18.					
14	Encoded color level	VIDEO OUT (75 Ω terminator) ⇩ Vectorscope	R14 : 12 I (R-Y) R17 : 12 I (B-Y) (TBC 1) R7 : 1F (PHASE) (TBC 2)	Color bar	E-E	1) INPUT the color bar signal directly to the vectorscope (75Ω terminated), and adjust the GAIN control to position all dots of respective colors in the ⊞ marking. 2) Set the DIP switch 2-3 of TBC-1 board to OFF. 3) Confrim that luminescent points of color bars are positioned in ⊞ mark respectively. 4) If any luminescent point is out of the ⊞ mark, turn off the AGC switch on the VTR's front panel and adjust the VIDEO LEVEL VR (on the VTR's front panel) to position it in the mark. 5) Set the DIP switch 2-3 to ON. 6) Temporarily adjust R14 to position the Red signal in the specified point (⊞marking). 7) Temporarily adjust R17 to position the blue signal at the specified level (⊞marking). 8) Adjust R14, R17 (TBC 1 board) and R7 (TBC 2 board) to position all dots of respective colors in the ⊞ markings.
		Correct phase with R14. Correct level with R17. Position all dots of signals at the correct points.				
15	Y/C timing	VIDEO OUT (75 Ω terminator)	SW1 : 4 I	Pulse & bar	E-E	1) Set SW1 to simmetrize the modulated 12.5T pulse in the base of the waveform possibly.
		 Flat or symmetric				

■ **LOCATION OF TEST POINTS AND ADJUSTMENT PARTS**

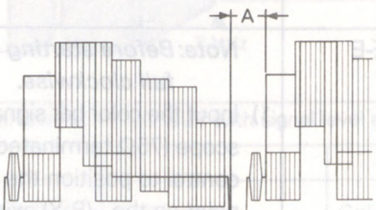
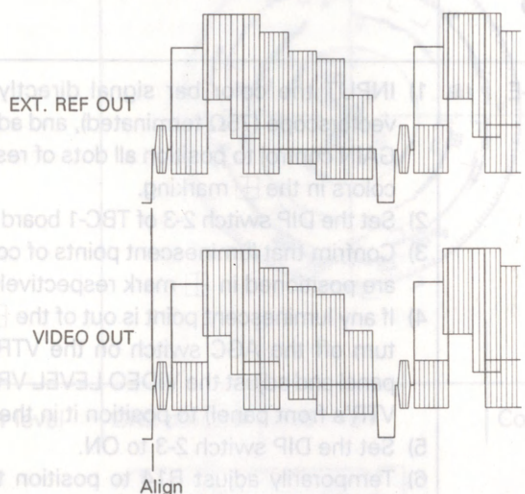
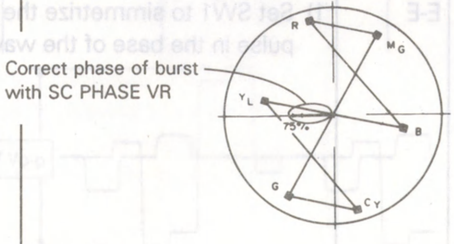






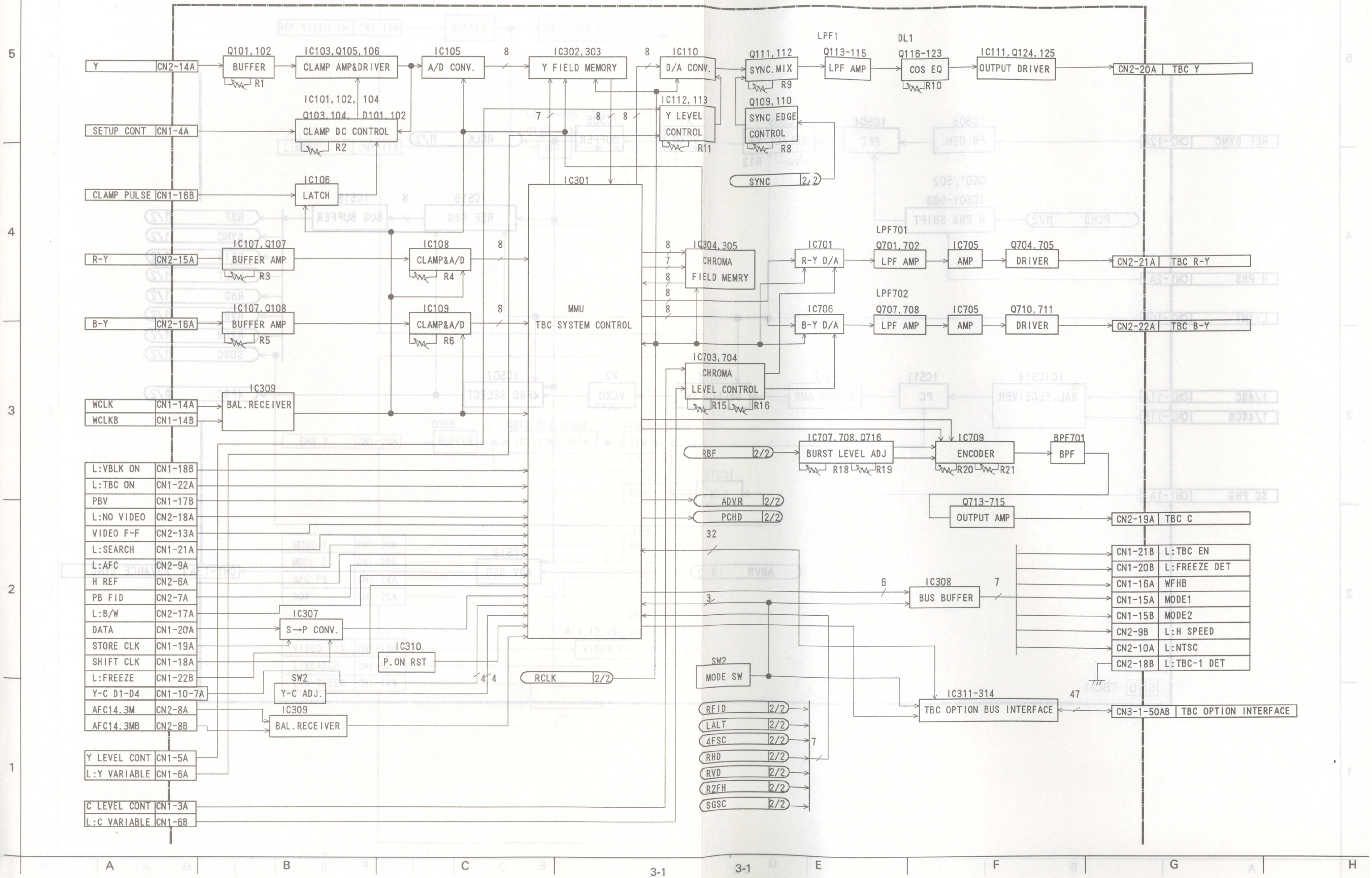
2.4 SUB PANEL CIRCUIT

Note:
- *Before proceeding to the following adjustment, make sure that the TBC 1, 2, 3 boards are correctly adjusted.*
- *Unless otherwise indicated, all check points and adjustment parts are located on the SUB PANEL board (BR-S822).*
- *For check and adjustment of this circuit, supply color bar signal (synchronized with the signal which will be inputted to the VIDEO IN terminal) to the EXT. REF IN terminal of the VIDEO LINE IN connector.*

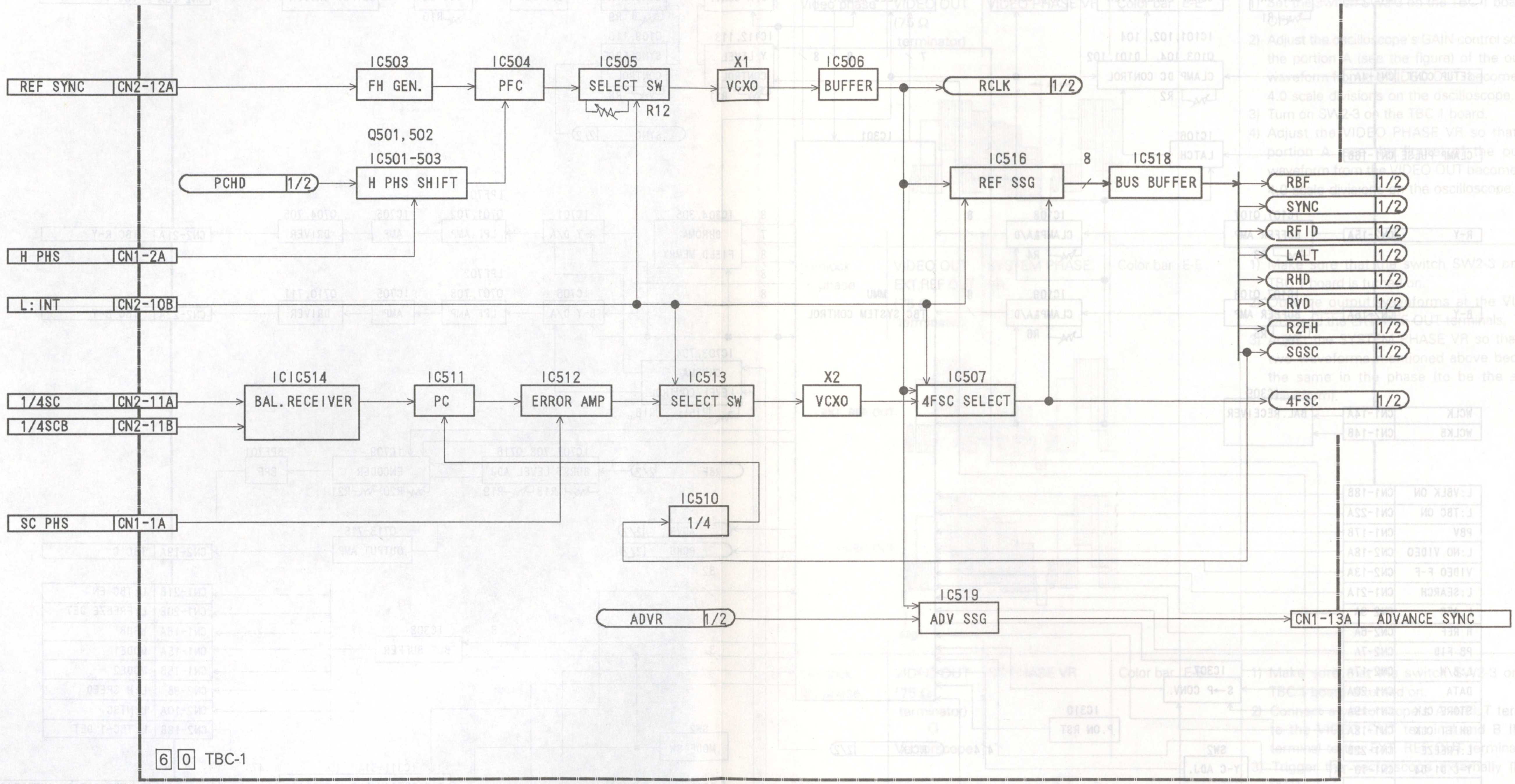
No.	Item	Check Point	Adjustment Parts	Signal	Mode	Check and Adjustment
1	Video phase	VIDEO OUT (75 Ω terminator) 	VIDEO PHASE VR	Color bar	E-E	1) Set the switch SW2-3 on the TBC 1 board to OFF. 2) Adjust the oscilloscope's GAIN control so that the portion A (see the figure) of the output waveform from the VIDEO OUT becomes for 4.0 scale divisions on the oscilloscope. 3) Turn on SW2-3 on the TBC 1 board. 4) Adjust the VIDEO PHASE VR so that the portion A (see the figure) of the output waveform from the VIDEO OUT becomes for 4.0 scale divisions on the oscilloscope.
2	Genlock H. phase	VIDEO OUT EXT.REF OUT (75 Ω terminator) 	SYSTEM PHASE VR	Color bar	E-E	1) Make sure that the switch SW2-3 on the TBC 1 board is turned on. 2) Observe output waveforms at the VIDEO OUT and the EXT. REF OUT terminals. 3) Adjust the SYSTEM PHASE VR so that the two waveforms mentioned above become the same in the phase (to be the same waveform).
3	Genlock SC phase	VIDEO OUT (75 Ω terminator) ⇩ Vectorscope 	SC PHASE VR	Color bar	E-E	1) Make sure that the switch SW2-3 on the TBC 1 board is turned on. 2) Connect a vectorscope's A INPUT terminal to the VIDEO OUT terminal and B INPUT terminal to the EXT. REF OUT terminal. 3) Trigger the vectorscope externally (B INPUT). 4) Set the vectorscop's PHASE and GAIN controls to position the burst signal of the B INPUT terminal correctly. 5) Adjust the SC PHASE VR to position the burst signal of A INPUT correctly. 6) Set the switch SW2-3 to OFF.

SECTION 3
DIAGRAM AND CIRCUIT BOARDS

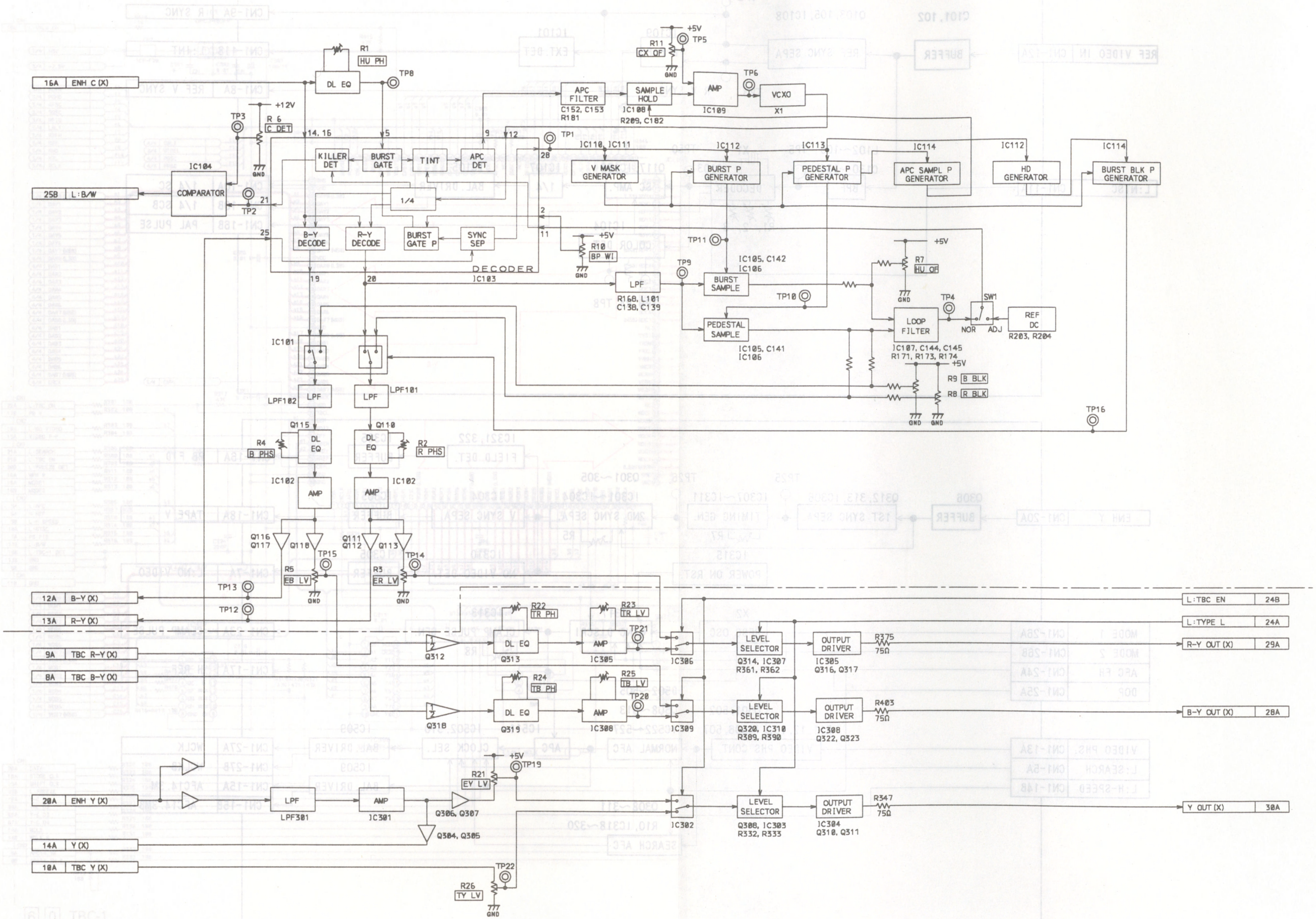
3.1 TBC-1 BLOCK DIAGRAM
— BLOCK DIAGRAM (1/2) —



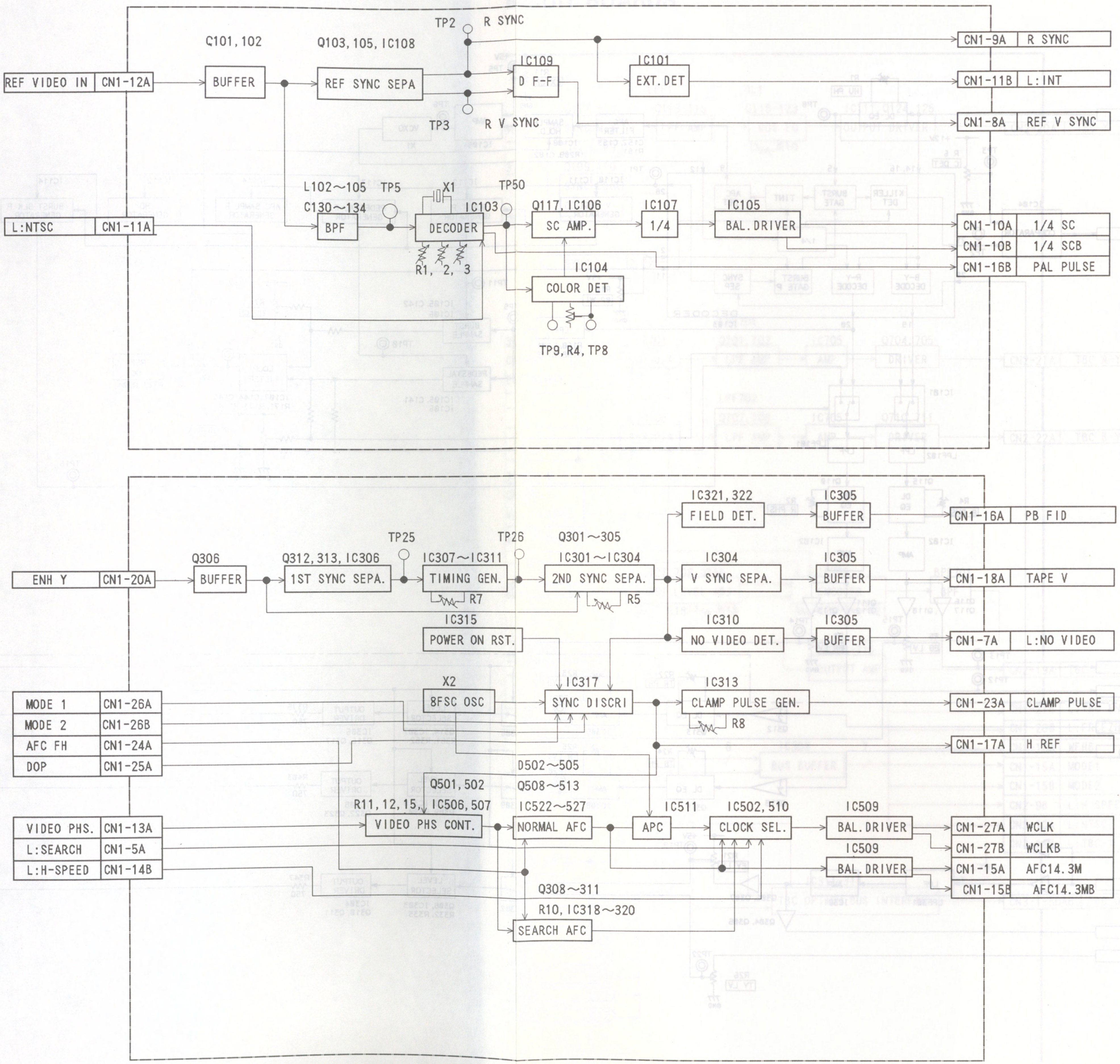
— BLOCK DIAGRAM (2/2) —



3.2 TBC-2 BLOCK DIAGRAM

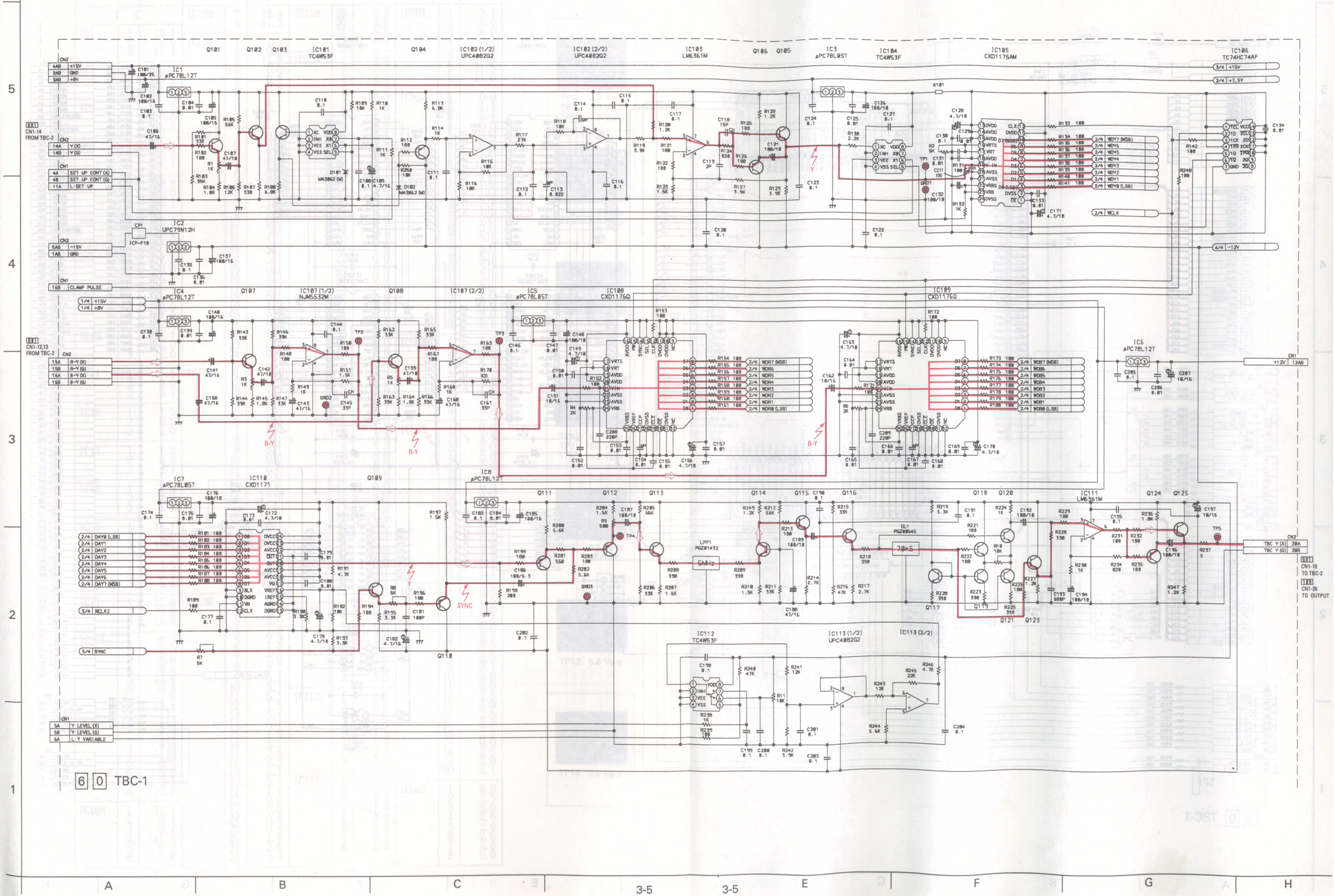


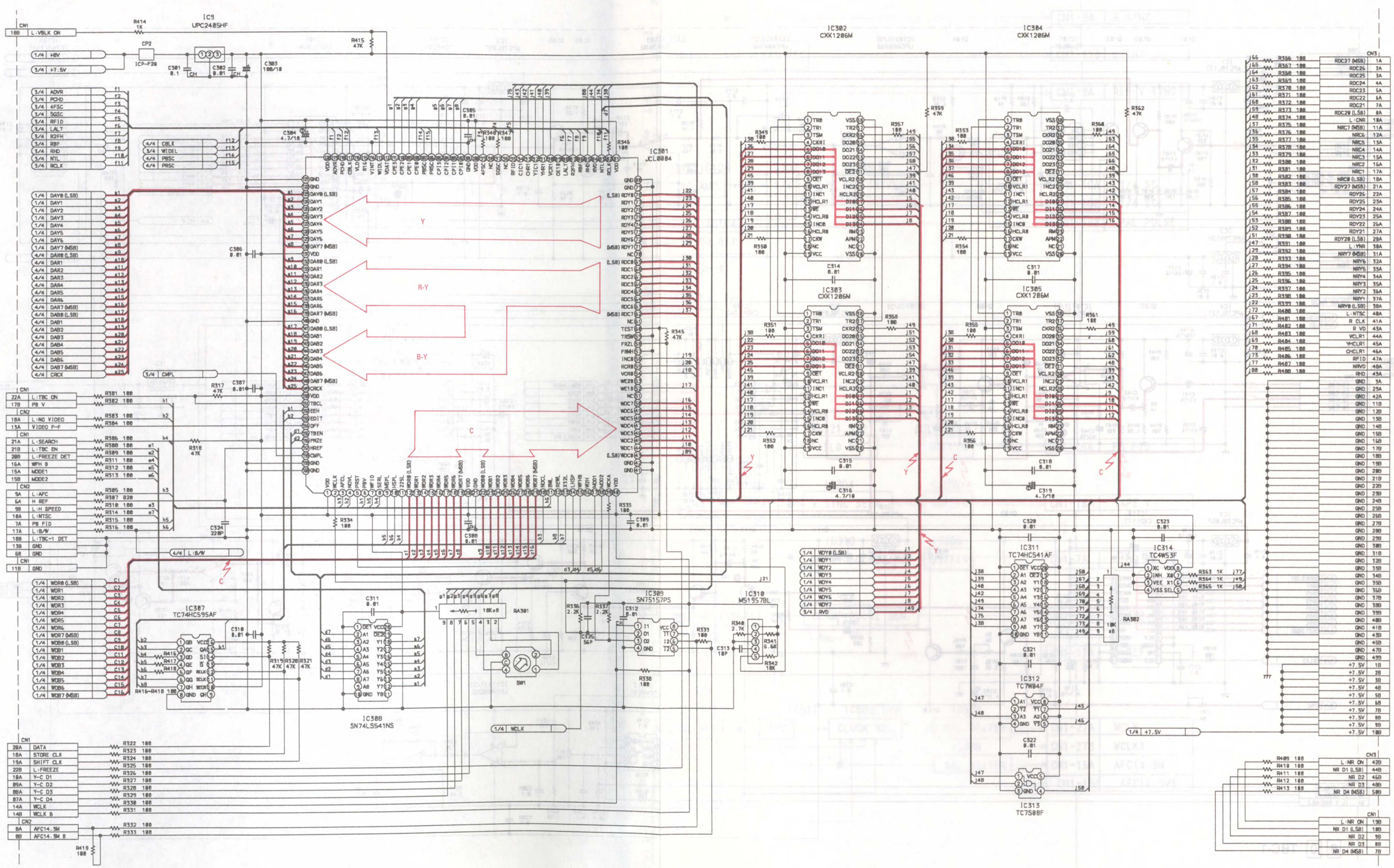
3.3 TBC-3 BLOCK DIAGRAM DIAGRAM

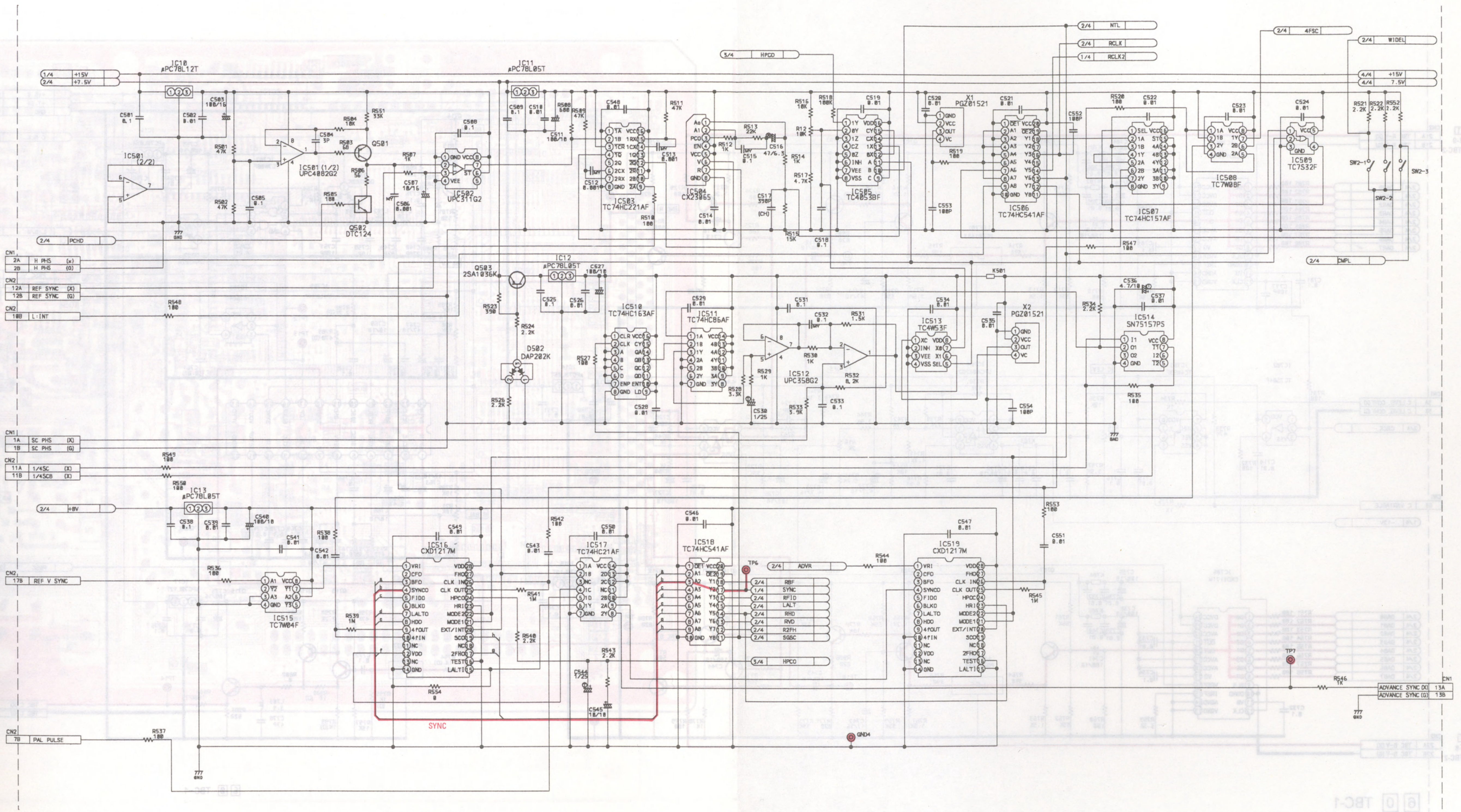


3.4 TBC-1 SCHEMATIC DIAGRAM

— DIAGRAM (1/4) —



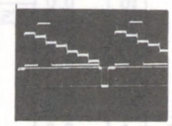




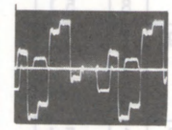
6 0 TBC-1

— TBC-1 <60> DC voltage (1/2) —

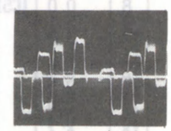
SYMBOL	No.	PB
I C		
IC1	1	15.1
	2	0.0
	3	12.4
IC2	1	0.0
	2	-15.1
	3	-11.9
IC3	1	7.6
	2	0.0
	3	5.1
IC4	1	15.2
	2	0.0
	3	12.1
IC5	1	7.5
	2	0.0
	3	5.1
IC6	1	15.2
	2	0.0
	3	12.0
IC7	1	7.5
	2	0.0
	3	5.1
IC8	1	15.2
	2	0.0
	3	12.0
IC10	1	15.1
	2	0.0
	3	12.0
IC11	1	7.5
	2	0.0
	3	5.1
IC12	1	7.5
	2	0.0
	3	5.0
IC13	1	7.5
	2	0.0
	3	5.1
IC14	1	7.5
	2	0.0
	3	5.1
IC15	1	15.1
	2	0.0
	3	11.8
IC16	1	7.5
	2	0.0
	3	5.1
IC17	1	15.0
	2	0.0
	3	11.9
IC101	1	6.3
	2	0.0
	3	0.0
	4	0.0
	5	12.4
	6	6.3
	7	4.9
	8	12.4
IC102	1	-2.8
	2	0.8
	3	0.8
	4	-11.9
	5	0.1
	6	0.1
	7	0.3
	8	12.4
IC103	1	-11.3
	2	0.4
	3	0.4
	4	-11.9
	5	0.0
	6	1.8
	7	12.4
	8	-11.3
IC104	1	1.2
	2	0.0
	3	-11.9
	4	0.0
	5	0.8
	6	0.8
	7	1.2
	8	5.1
IC105	1	0.0
	2	0.0
	3	2.3
	4	2.2
	5	2.3
	6	2.6
	7	2.5
	8	1.9
	9	1.7
	10	0.6
	11	5.1
	12	1.5
	13	5.1
	14	5.1
	15	5.1
	16	2.7
	17	2.7
	18	5.1
	19	1.2
	20	0.0
	21	0.0
	22	0.7
	23	0.7
	24	0.0
IC106	1	5.1
	2	0.3
	3	1.7
	4	5.1
	5	0.3
	6	0.0
	7	0.0
	8	5.1
	9	5.1
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	5.1
IC107	1	6.1
	2	6.1
	3	6.1
	4	0.0
	5	6.0
	6	6.0
	7	6.0
	8	12.1
IC108	1	2.5
	2	2.1
	3	2.0
	4	1.8
	5	2.3
	6	1.6
	7	2.0
	8	3.2
	9	5.1
	10	5.1
	11	5.1
	12	1.5
	13	5.1
	14	5.1
	15	4.9
	16	5.1
	17	2.5
	18	2.5
	19	5.1
	20	5.1
	21	1.6
	22	0.0
	23	0.0
	24	0.6
	25	0.6
	26	1.6
	27	2.6
	28	0.0
	29	0.0
	30	0.0
	31	0.0
	32	0.0
IC109	1	2.5
	2	2.1
	3	2.0
	4	1.8
	5	2.3
	6	1.6
	7	2.0
	8	3.2
	9	5.1
	10	5.1
	11	5.1
	12	1.5
	13	5.1
	14	5.1
	15	4.9
	16	5.1
	17	2.5
	18	2.5
	19	5.1
	20	5.1
	21	1.6
	22	0.0
	23	0.0
	24	0.6
	25	0.6
	26	1.6
	27	2.6
	28	0.0
	29	0.0
	30	0.0
	31	0.0
	32	0.0
IC110	1	1.9
	2	1.9
	3	1.9
	4	2.2
	5	3.1
	6	1.6
	7	1.6
	8	0.6
	9	0.0
	10	0.0
	11	0.5
	12	2.5
	13	0.0
	14	0.0
	15	1.2
	16	1.2
	17	3.5
	18	5.1
	19	5.1
	20	5.3
	21	0.0
	22	5.1
	23	5.1
	24	5.1
IC111	1	0.6
	2	5.5
	3	5.5
	4	0.0
	5	0.0
	6	5.5
	7	11.9
	8	0.6
IC112	1	0.2
	2	0.0
	3	0.0
	4	0.0
	5	11.9
	6	4.9
	7	9.7
	8	12.0
IC113	1	1.3
	2	1.3
	3	1.3
	4	-11.9
	5	0.0
	6	0.0
	7	-2.2
	8	12.0
IC501	1	5.4
	2	6.0
	3	6.0
	4	0.0
	5	0.0
	6	11.5
	7	11.5
	8	11.9
IC502	1	0.0
	2	1.3
	3	2.4
	4	0.0
	5	0.0
	6	0.0
	7	1.5
	8	11.9
IC503	1	0.0
	2	1.5
	3	5.1
	4	1.1
	5	0.0
	6	0.0
	7	5.1
	8	0.0
	9	5.1
	10	5.1
	11	5.1
	12	5.1
	13	4.0
	14	0.0
	15	3.0
	16	5.1
IC504	1	0.5
	2	4.3
	3	4.2
	4	5.1
	5	5.1
	6	1.1
	7	5.1
	8	0.0
IC505	1	0.0
	2	3.1
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	0.0
	8	0.0
	9	5.1
	10	0.0
	11	0.0
	12	3.1
	13	0.4
	14	3.1
	15	3.1
	16	5.1
IC506	1	0.0
	2	2.5
	3	0.0
	4	2.5
	5	0.0
	6	2.5
	7	0.0
	8	2.5
	9	0.1
	10	0.0
	11	0.0
	12	2.5
	13	0.0
	14	2.5
	15	0.0
	16	2.6
	17	0.0
	18	2.5
	19	0.0
	20	5.1
IC507	1	0.0
	2	2.5
	3	0.0
	4	2.6
	5	2.6
	6	2.6
	7	2.6
	8	0.0



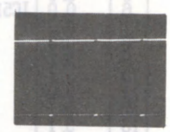
TP1 2.2 Vp-p
TP4 1.0 Vp-p
TP5 1.0 Vp-p



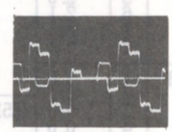
TP2 1.2 Vp-p
TP8 0.5 Vp-p



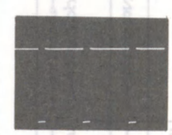
TP3 1.0 Vp-p
TP10 0.36 Vp-p
TP11 0.34 Vp-p



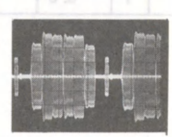
TP6 5.2 Vp-p
TP7 5.2 Vp-p
TP13 5.2 Vp-p



TP9 0.5 Vp-p

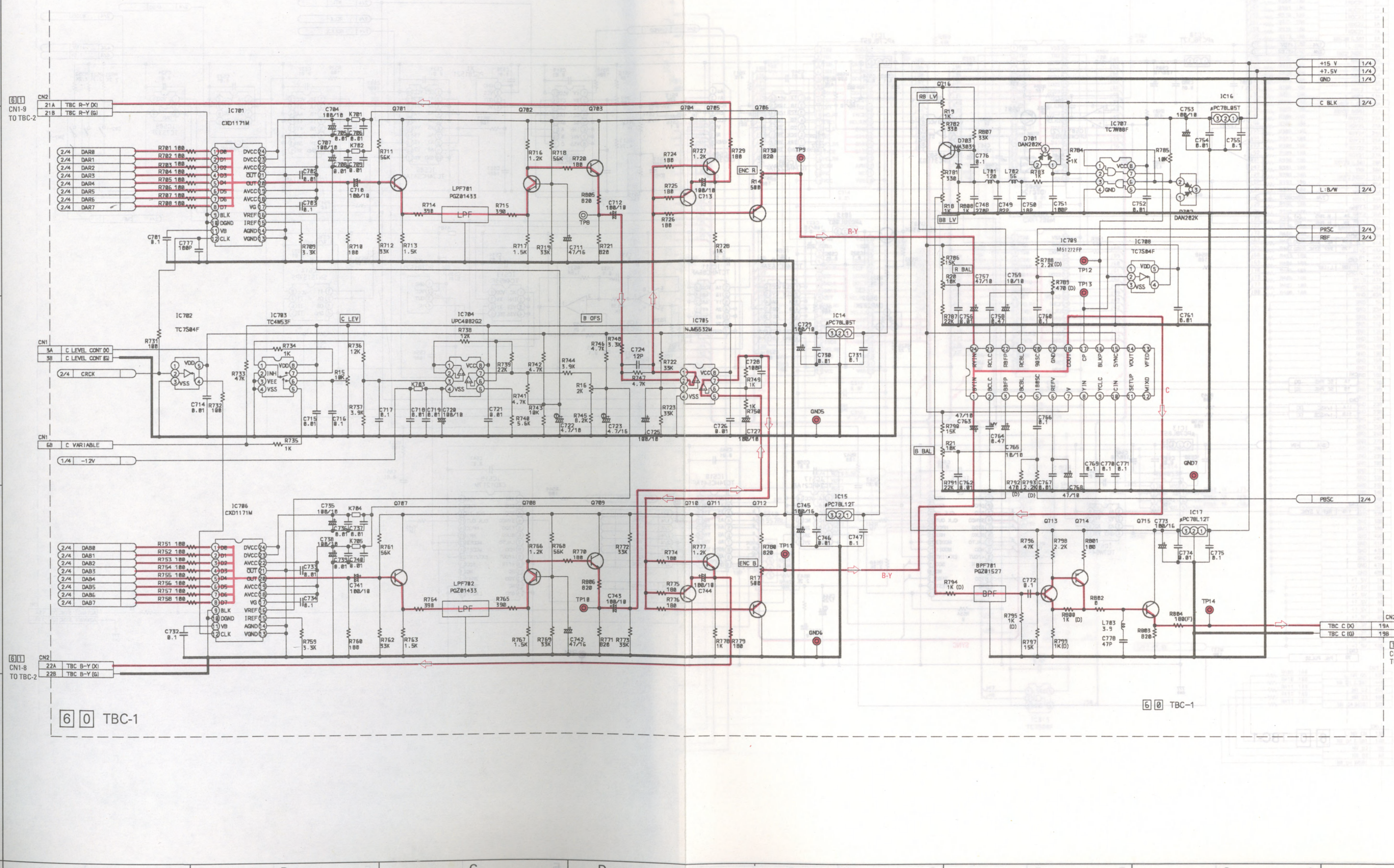


TP12 5.0 Vp-p



TP14 0.6 Vp-p

— DIAGRAM (4/4) —



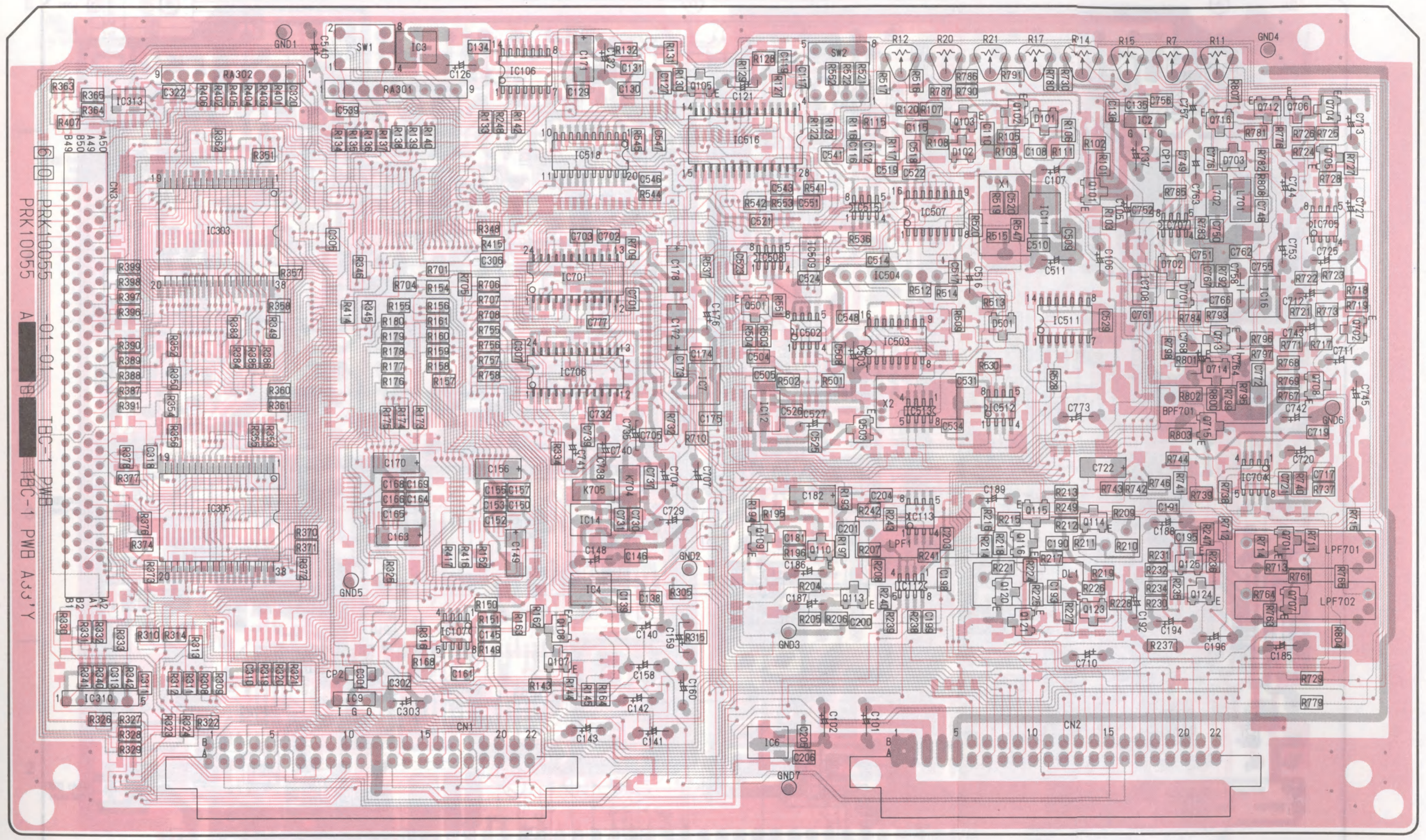
CN1-9 TO TBC-2
TBC R-Y (X)
TBC R-Y (G)
IC701 CXD1171M
IC702 TC7S04F
IC703 TC4W53F
IC704 UPC4082G2
IC705 NJM5532M
IC706 CXD1171M
IC707 TC7W00F
IC708 TC7S04F
IC709 M51272FP
IC14 μPC78L05T
IC15 μPC78L12T
IC16 μPC78L05T
IC17 μPC78L12T
LPF701 PGZ01433
LPF702 PGZ01433
BPF701 PGZ01527
C LEVEL CONT (X)
C LEVEL CONT (G)
CRCK
C VARIABLE
-12V
C LEV
B OFS
ENC R
ENC B
R-Y
B-Y
RB LV
BB LV
R BAL
B BAL
+15 V
+7.5V
GND
C BLK
L:B/W
PRSC
RBF
PBSC
TBC C (X)
TBC C (G)
CN1-25 TO OUTPUT
CN1-8 TO TBC-2
TBC B-Y (X)
TBC B-Y (G)
TBC-1

— TBC-1 <60> DC voltage (2/2) —

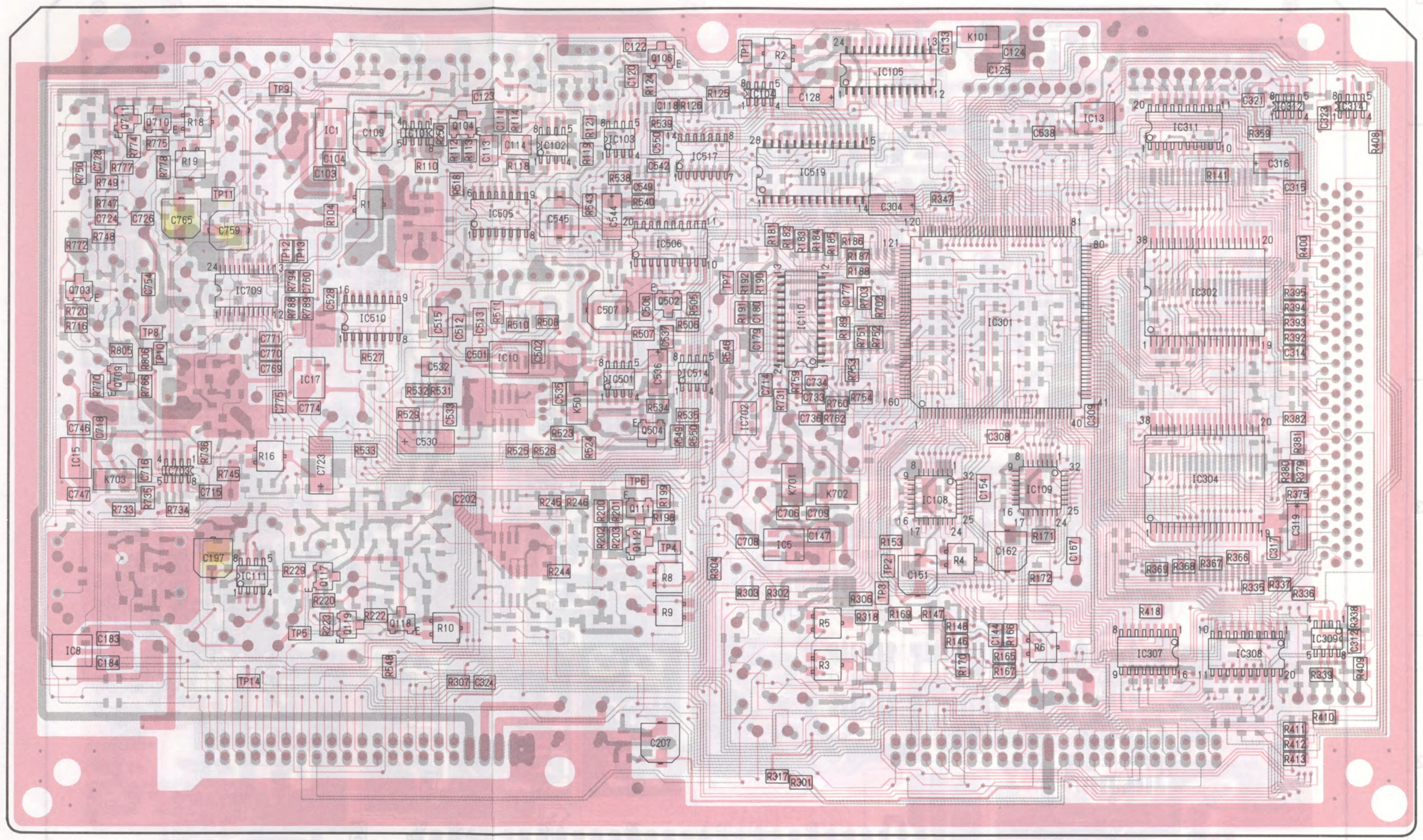
SYMBOL	No.	PB
IC507	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	5.1
IC508	1	2.6
	2	5.1
	3	2.8
	4	0.0
	5	2.6
	6	5.1
	7	2.8
	8	5.1
IC509	1	.
	2	.
	3	.
	4	.
	5	.
IC510	1	5.1
	2	2.6
	3	5.1
	4	5.1
	5	5.1
	6	5.1
	7	5.1
	8	0.0
	9	5.1
	10	0.0
	11	0.0
	12	0.0
	13	2.6
	14	2.6
	15	0.4
	16	5.1
IC511	1	0.0
	2	2.6
	3	2.6
	4	0.0
	5	0.0
	6	0.0
	7	0.0
	8	0.0
	9	5.1
	10	5.1
	11	0.0
	12	5.1
	13	5.1
	14	5.1
IC512	1	1.1
	2	1.7
	3	1.7
	4	0.0
	5	2.6
	6	2.1
	7	2.1
	8	5.1
IC513	1	3.0
	2	0.0
	3	0.0
	4	0.0
	5	0.1
	6	1.1
	7	3.1
	8	5.1
IC514	1	2.2
	2	5.1
	3	0.5
	4	0.0
	5	2.3
	6	2.4
	7	1.7
	8	5.1
IC515	1	5.1
	2	0.0
	3	0.0
	4	0.0
	5	5.1
	6	5.1
	7	0.0
	8	5.1
IC516	1	0.0
	2	5.0
	3	4.8
	4	4.6
	5	4.6
	6	3.9
	7	2.6
	8	4.5
	9	2.2
	10	2.5
	11	0.0
	12	4.9
	13	0.0
	14	0.0
	15	0.0
	16	0.0
	17	1.7
	18	0.0
	19	2.5
	20	0.0
	21	0.0
	22	0.0
	23	0.0
	24	0.0
	25	0.0
	26	0.0
	27	2.6
	28	5.1
IC517	1	0.0
	2	0.0
	3	0.0
	4	4.9
	5	1.1
	6	0.0
	7	0.0
	8	4.6
	9	4.5
	10	5.1
	11	0.0
	12	5.1
	13	5.1
	14	5.1
IC518	1	0.0
	2	4.9
	3	4.6
	4	4.6
	5	2.5
	6	4.5
	7	4.9
	8	1.6
	9	2.5
	10	0.0
	11	2.6
	12	1.6
	13	4.9
	14	4.5
	15	2.5
	16	0.2
	17	4.6
	18	0.0
	19	0.0
	20	0.0
IC519	1	5.1
	2	5.1
	3	4.9
	4	4.6
	5	4.6
	6	3.9
	7	2.6
	8	4.5
	9	5.1
	10	0.0
	11	0.1
	12	4.9
	13	0.0
	14	0.0
	15	0.0
	16	0.0
	17	1.6
	18	0.0
	19	0.0
	20	5.1
	21	0.0
	22	0.0
	23	4.5
IC519	24	0.0
	25	2.5
	26	2.5
	27	2.5
	28	5.1
IC701	1	0.0
	2	2.0
	3	0.0
	4	1.8
	5	2.1
	6	1.5
	7	1.8
	8	3.5
	9	0.0
	10	0.0
	11	0.5
	12	2.3
	13	0.0
	14	0.0
	15	1.2
	16	1.2
	17	3.6
	18	5.1
	19	5.1
	20	0.6
	21	0.0
	22	5.1
	23	5.1
	24	5.1
IC702	1	0.2
	2	2.3
	3	0.0
	4	2.8
	5	5.1
IC703	1	5.1
	2	0.0
	3	0.0
	4	0.0
	5	11.8
	6	0.0
	7	2.6
	8	11.8
IC704	1	1.3
	2	1.3
	3	1.3
	4	-11.9
	5	0.0
	6	0.0
	7	-2.2
	8	0.0
IC705	1	5.9
	2	5.9
	3	—
	4	0.0
	5	5.9
	6	5.9
	7	5.9
	8	11.8
IC706	1	0.0
	2	2.0
	3	0.0
	4	1.8
	5	2.1
	6	1.5
	7	1.8
	8	3.5
	9	0.0
	10	0.0
	11	0.5
	12	2.3
	13	0.0
	14	0.0
	15	1.2
	16	1.2
	17	3.6
	18	5.1
	19	5.1
	20	0.6
	21	0.0
	22	5.1
	23	5.1
	24	5.1
IC707	1	5.1
	2	4.0
	3	0.3
	4	0.0
	5	0.3
	6	5.1
	7	4.0
	8	5.1
IC708	1	0.3
	2	4.9
	3	0.0
	4	0.3
	5	5.1
IC709	1	2.4
	2	1.8
	3	2.9
	4	3.0
	5	3.6
	6	3.0
	7	5.0
	8	2.3
	9	1.7
	10	3.0
	11	0.0
	12	1.6
	13	0.3
	14	4.2
	15	5.0
	16	4.1
	17	4.9
	18	3.2
	19	0.0
	20	3.6
	21	3.0
	22	2.9
	23	1.7
	24	2.3
TRANSISTOR		
Q101	B	6.6
	C	12.4
	E	6.0
Q102	B	2.0
	C	12.4
	E	1.4
Q103	B	6.3
	C	12.4
	E	5.7
Q104	B	0.0
	C	-11.9
	E	0.1
Q105	B	0.0
	C	0.0
	E	0.0
Q106	B	1.8
	C	-11.9
	E	2.4
Q107	B	6.4
	C	12.1
	E	5.8
Q108	B	2.4
	C	5.1
	E	1.8
Q109	B	.
	C	.
	E	.
Q110	B	1.8
	C	-12.0
	E	2.4
Q111	B	0.4
	C	-11.9
	E	1.0
Q112	B	.
	C	.
	E	.
Q113	B	4.2
	C	12.0
	E	3.6
Q114	B	4.2
	C	0.0
	E	3.6
Q115	B	9.2
	C	12.0
	E	8.5
Q116	B	.
	C	.
	E	.
Q117	B	1.9
	C	1.9
	E	1.3
Q118	B	6.2
	C	0.0
	E	5.5
Q119	B	1.9
	C	0.0
	E	1.3
Q120	B	6.2
	C	0.0
	E	5.5
Q121	B	1.9
	C	5.5
	E	1.3
Q123	B	6.2
	C	12.0
	E	5.5
Q124	B	5.5
	C	0.0
	E	6.2
Q125	B	5.5
	C	12.0
	E	4.9
Q501	B	5.4
	C	1.3
	E	6.0
Q502	B	2.6
	C	1.3
	E	0.0
Q503	B	5.7
	C	7.4
	E	7.5
Q504	B	.
	C	.
	E	.
Q701	B	4.2
	C	11.8
	E	3.6
Q702	B	4.2
	C	9.1
	E	3.6
Q703	B	9.0
	C	11.8
	E	8.4
Q704	B	5.9
	C	0.0
	E	6.6
Q705	B	5.9
	C	11.8
	E	5.3
Q706	B	5.9
	C	0.0
	E	6.6
Q707	B	4.2
	C	11.8
	E	3.6
Q708	B	4.2
	C	9.0
	E	3.6
Q709	B	8.9
	C	11.8
	E	8.3
Q710	B	5.9
	C	0.0
	E	6.5
Q711	B	5.9
	C	11.8
	E	5.3
Q712	B	5.9
	C	0.0
	E	6.5
Q713	B	5.9
	C	10.8
	E	5.4
Q714	B	10.8
	C	10.1
	E	11.4
Q715	B	10.0
	C	0.0
	E	9.4
Q716	B	.
	C	.
	E	.
CONNECTOR		
CN1	4A	4.9
	4B	0.0
	11A	12.4
	16B	0.3
	5A	9.7
	5B	0.0
	6A	11.9
	12AB	12.0
	2A	2.4
	2B	0.0
	1A	0.1
	1B	0.0
	13A	4.6
	13B	0.0
	3A	2.6
	3B	0.0
	6B	11.8
CN2	4AB	15.2
	2AB	0.0
	3AB	7.5
	14A	5.5
	14B	0.0
	5AB	-15.1
	1AB	0.0
	15A	3.3
	15B	0.0
	16A	3.3
	16B	0.0
	20A	4.8
	20B	0.0
	12A	5.1
	12B	0.0
	10B	0.1
CN2	11A	2.6
	11B	1.2
	17B	5.1
	7B	1.1
	21A	5.3
	21B	0.0
	22A	5.3
	22B	0.0
	19A	9.4
	19B	0.0

3.5 TBC-1 CIRCUIT BOARD

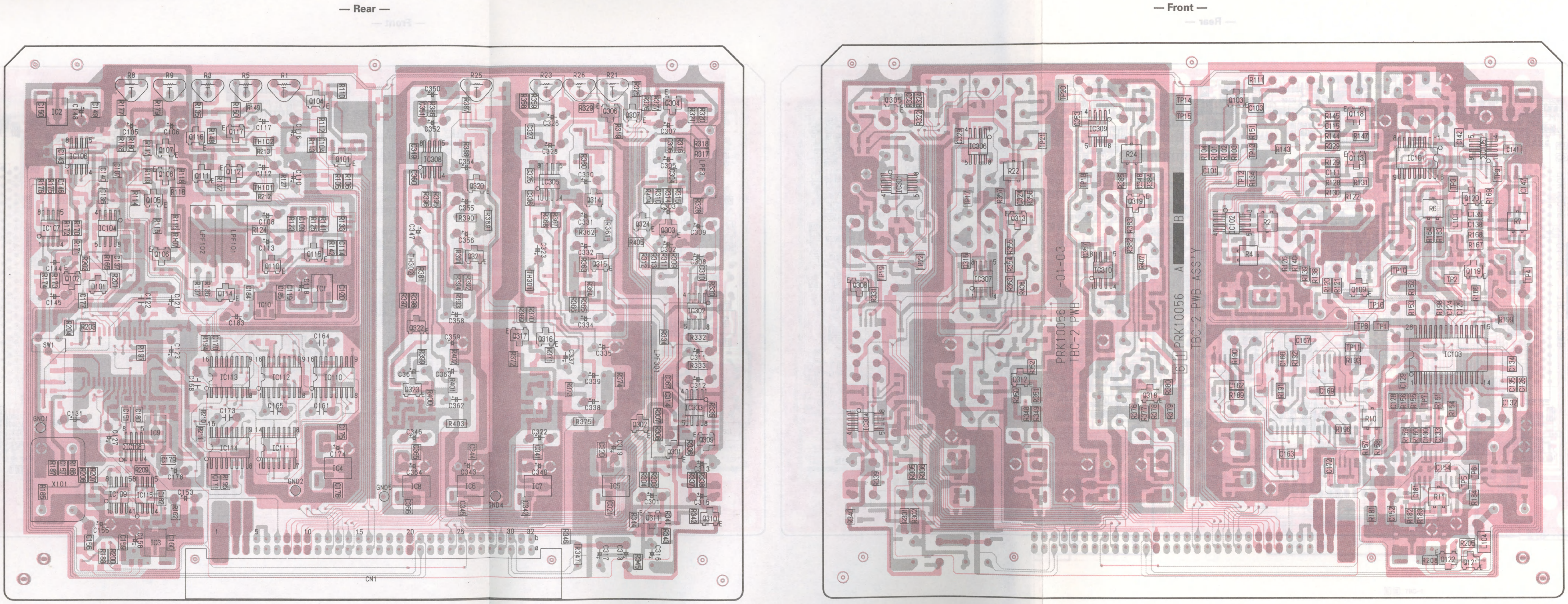
— Rear —



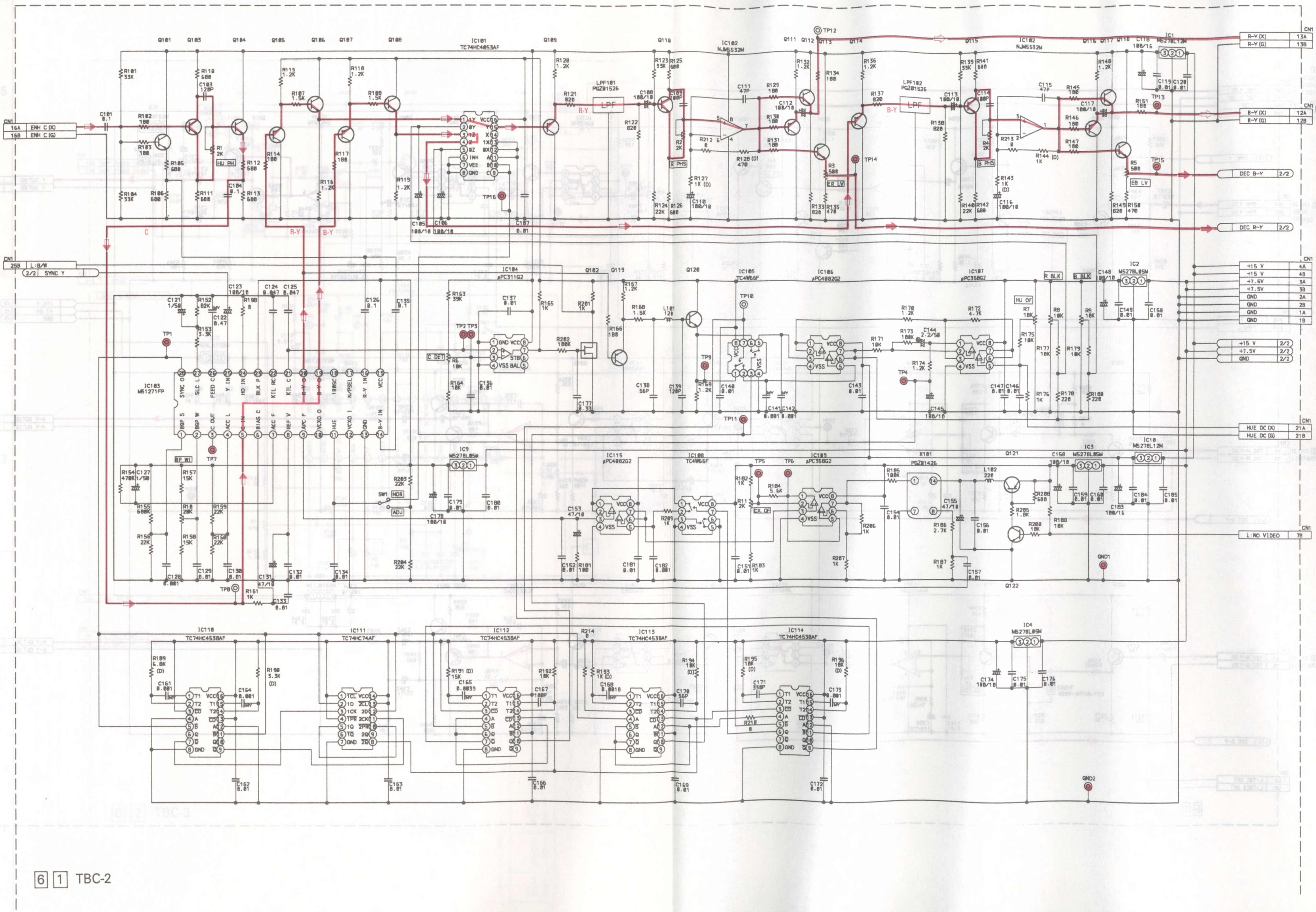
— Front —



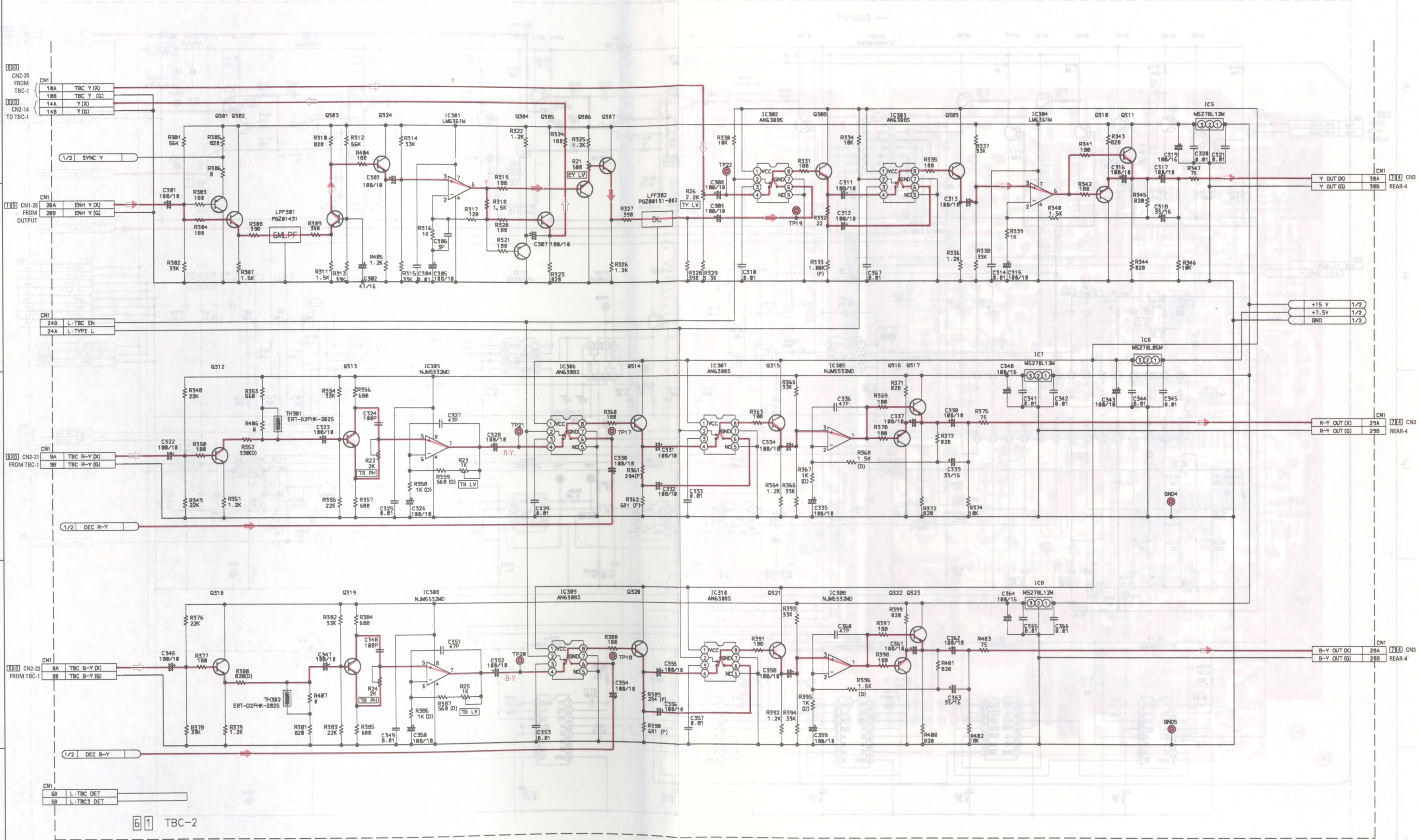
3.6 TBC-2 CIRCUIT BOARD



3.7 TBC-2 SCHEMATIC DIAGRAM
— DIAGRAM (1/2) —



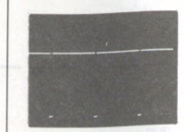
— DIAGRAM (2/2) —



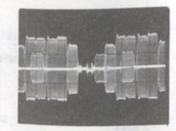
TBC Y (X)
TBC Y (G)
Y (X)
Y (G)
1/2 SYNC Y
ENH Y (X)
ENH Y (G)
L:TBC EN
L:TYPE L
TBC R-Y (X)
TBC R-Y (G)
1/2 DEC R-Y
TBC B-Y (X)
TBC B-Y (G)
1/2 DEC B-Y
L:TBC DET
L:TBC5 DET
Y OUT (X)
Y OUT (G)
R-Y OUT (X)
R-Y OUT (G)
B-Y OUT (X)
B-Y OUT (G)
+15 V
+7.5V
GND
IC301 LM6361M
IC302 AN6380S
IC303 AN6380S
IC304 LM6361M
IC305 NJM5532MD
IC306 AN6380S
IC307 AN6380S
IC308 NJM5532MD
IC309 AN6380S
IC310 AN6380S
IC5 M5278L12M
IC6 M5278L05M
IC7 M5278L12M
IC8 M5278L12M
LPF301 PGZ01431
LPF302 PGZ00131-002
TH301 ERT-D2FHK-202S
TH302 ERT-D2FHK-202S
6 1 TBC-2

— TBC-2 <61> DC voltage —

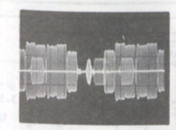
SYMBOL	No.	PB
I C		
IC1	1	15.2
	2	0.0
	3	12.0
IC2	1	7.5
	2	0.0
	3	5.1
IC3	1	7.5
	2	0.0
	3	5.1
IC4	1	7.5
	2	0.0
	3	5.1
IC5	1	15.2
	2	0.0
	3	12.2
IC6	1	7.5
	2	0.0
	3	5.1
IC7	1	15.2
	2	0.0
	3	12.0
IC8	1	15.2
	2	0.0
	3	12.1
IC9	1	7.5
	2	0.0
	3	5.1
IC10	1	15.0
	2	0.0
	3	12.0
IC101	1	2.2
	2	2.2
	3	2.2
	4	2.2
	5	2.2
	6	0.0
	7	0.0
	8	0.0
	9	4.4
	10	4.4
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	2.2
	16	5.1
IC102	1	3.9
	2	3.9
	3	3.9
	4	0.0
	5	0.0
	6	3.9
	7	3.9
	8	12.0
IC103	1	2.9
	2	2.9
	3	2.4
	4	2.6
	5	3.1
	6	3.1
	7	4.4
	8	3.1
	9	3.1
	10	2.9
	11	2.6
	12	3.4
	13	0.0
	14	3.0
	15	5.1
	16	3.0
	17	0.9
	18	4.2
	19	2.2
	20	2.2
	21	1.9
	22	2.8
IC103	23	5.1
	24	0.0
	25	3.0
	26	3.1
	27	1.2
	28	4.2
IC104	1	0.0
	2	1.9
	3	2.4
	4	0.0
	5	11.9
	6	11.9
	7	0.2
	8	12.0
IC105	1	2.2
	2	2.2
	3	0.1
	4	0.0
	5	2.2
	6	2.2
	7	0.2
	8	5.1
IC106	1	2.2
	2	2.2
	3	2.2
	4	0.0
	5	2.2
	6	2.2
	7	2.2
	8	5.1
IC107	1	2.6
	2	2.2
	3	2.2
	4	0.0
	5	2.2
	6	2.2
	7	2.2
	8	5.1
IC108	1	3.1
	2	3.1
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	0.4
	8	5.1
IC109	1	1.7
	2	3.1
	3	3.1
	4	0.0
	5	1.7
	6	1.7
	7	3.3
	8	5.1
IC110	1	0.0
	2	4.6
	3	5.1
	4	0.0
	5	4.2
	6	0.6
	7	4.6
	8	0.0
	9	4.8
	10	4.8
	11	4.2
	12	0.0
	13	5.1
	14	4.9
	15	0.0
	16	5.1
IC111	1	5.1
	2	4.2
	3	4.6
	4	5.1
	5	5.0
	6	0.1
	7	0.0
	8	4.9
	9	0.3
	10	5.0
	11	5.0
	12	4.8
IC111	13	4.2
	14	5.1
	15	5.1
	16	5.1
IC112	1	0.0
	2	2.8
	3	5.1
	4	4.1
	5	4.2
	6	4.2
	7	1.0
	8	0.0
	9	5.0
	10	0.2
	11	5.1
	12	4.2
	13	4.9
	14	5.0
	15	0.0
	16	5.1
IC113	1	0.0
	2	5.0
	3	5.1
	4	4.2
	5	5.0
	6	0.2
	7	5.0
	8	0.0
	9	5.0
	10	0.1
	11	5.1
	12	5.0
	13	4.9
	14	5.0
	15	0.0
	16	5.1
IC114	1	0.0
	2	4.8
	3	5.1
	4	5.0
	5	5.1
	6	0.4
	7	4.8
	8	0.0
	9	4.4
	10	0.7
	11	1.0
	12	0.0
	13	5.1
	14	4.5
	15	0.0
	16	5.1
IC115	1	3.0
	2	3.0
	3	3.0
	4	0.0
	5	3.0
	6	3.0
	7	3.0
	8	12.0
IC301	1	0.7
	2	6.1
	3	6.1
	4	0.0
	5	0.0
	6	6.1
	7	12.2
	8	0.7
IC302	1	5.1
	2	4.2
	3	2.7
	4	2.7
	5	0.0
	6	2.7
	7	0.0
	8	2.7
IC303	1	5.1
	2	0.0
	3	2.6
	4	2.7
	5	0.0
	6	2.7
	7	0.0
IC303	8	2.7
IC304	1	0.6
	2	6.1
	3	0.0
	4	0.0
	5	0.0
	6	6.7
	7	12.2
	8	0.6
IC305	1	6.7
	2	6.0
	3	6.0
	4	0.0
	5	3.9
	6	3.9
	7	3.9
	8	12.0
IC306	1	5.1
	2	0.5
	3	2.6
	4	2.7
	5	0.0
	6	2.7
	7	0.0
	8	2.7
IC307	1	5.1
	2	0.1
	3	2.6
	4	2.7
	5	0.0
	6	2.7
	7	0.0
	8	2.7
IC308	1	6.8
	2	6.1
	3	6.1
	4	0.0
	5	3.9
	6	3.9
	7	3.9
	8	12.1
IC309	1	5.1
	2	0.5
	3	2.6
	4	2.7
	5	0.0
	6	2.7
	7	0.0
	8	2.7
IC310	1	5.1
	2	0.1
	3	2.6
	4	2.7
	5	0.0
	6	2.7
	7	0.0
	8	2.7
TRANSISTOR		
Q101	B	5.2
	C	12.0
	E	4.6
Q102	D	5.1
	G	0.3
	S	0.0
Q103	B	5.2
	C	7.6
	E	4.6
Q104	B	4.5
	C	12.0
	E	3.9
Q105	B	2.2
	C	0.0
	E	2.8
Q106	B	3.9
	C	0.0
	E	4.5
Q107	B	2.2
	C	0.0
	E	2.8
Q108	B	2.8
	C	5.1
	E	2.2
Q109	B	2.2
	C	0.0
	E	2.9
Q110	B	4.5
	C	8.2
	E	3.9
Q111	B	3.9
	C	0.0
	E	4.6
Q112	B	3.9
	C	12.0
	E	3.3
Q113	B	3.9
	C	12.0
	E	3.3
Q114	B	2.2
	C	0.0
	E	2.9
Q115	B	4.5
	C	8.2
	E	3.9
Q116	B	3.9
	C	0.0
	E	4.5
Q117	B	3.9
	C	12.0
	E	3.2
Q118	B	3.9
	C	12.0
	E	3.2
Q119	B	2.2
	C	0.0
	E	2.9
Q120	B	2.8
	C	5.1
	E	2.2
Q121	B	4.4
	C	5.1
	E	5.1
Q122	B	0.8
	C	0.1
	E	0.0
Q301	B	5.1
	C	0.0
	E	5.7
Q302	B	5.0
	C	12.2
	E	4.4
Q303	B	4.4
	C	10.7
	E	3.8
Q304	B	6.1
	C	0.0
	E	6.7
Q305	B	6.1
	C	12.2
	E	5.5
Q306	B	6.1
	C	0.0
	E	6.7
Q307	B	7.8
	C	12.2
Q307	E	7.1
Q308	B	2.7
	C	5.1
	E	2.1
Q309	B	2.7
	C	5.1
	E	2.1
Q310	B	6.7
	C	0.0
	E	7.4
Q311	B	6.7
	C	12.2
	E	6.1
Q312	B	5.8
	C	8.1
	E	5.2
Q313	B	4.5
	C	8.3
	E	3.9
Q314	B	2.6
	C	5.0
	E	2.0
Q315	B	2.7
	C	5.1
	E	2.1
Q316	B	6.7
	C	0.0
	E	7.3
Q317	B	6.7
	C	12.0
	E	6.0
Q318	B	6.7
	C	12.1
	E	6.1
Q319	B	4.5
	C	8.3
	E	0.0
Q320	B	2.7
	C	5.1
	E	2.1
Q321	B	2.7
	C	5.1
	E	2.1
Q322	B	6.8
	C	0.0
	E	7.4
Q323	B	6.8
	C	12.1
	E	6.1
Q324	B	10.7
	C	12.2
	E	10.1
CONNECTOR		
CN1	16A	7.0
	16B	0.0
	25B	5.1
	13A	3.3
	13B	0.0
	12A	3.2
	12B	0.0
	4A	15.2
	4B	15.2
	3A	7.5
	3B	7.5
	2A	0.0
	2B	0.0
	1A	0.0
CN1	1B	0.0
	21A	2.2
	21B	0.0
	7B	5.0
	10A	4.9
	10B	0.0
	14A	5.5
	14B	0.0
	20A	3.6
	20B	0.0
	24B	0.5
	24A	0.1
	9A	5.3
	9B	0.0
	8A	5.3
	8B	0.0
	6B	0.0
	5B	0.0
	30A	0.0
	30B	0.0
	29A	0.0
	29B	0.0
	28A	0.0
	28B	0.0



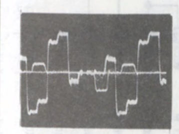
TP1 4.5 Vp-p
TP16 5.0 Vp-p



TP7 0.26 Vp-p



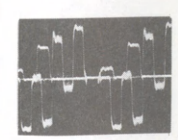
TP8 0.2 Vp-p



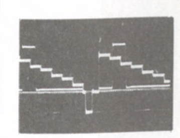
TP9 1.1 Vp-p
TP12 0.75 Vp-p
TP14 0.48 Vp-p
TP17 0.68 Vp-p
TP21 0.78 Vp-p



TP10 5 Vp-p
TP11 5 Vp-p



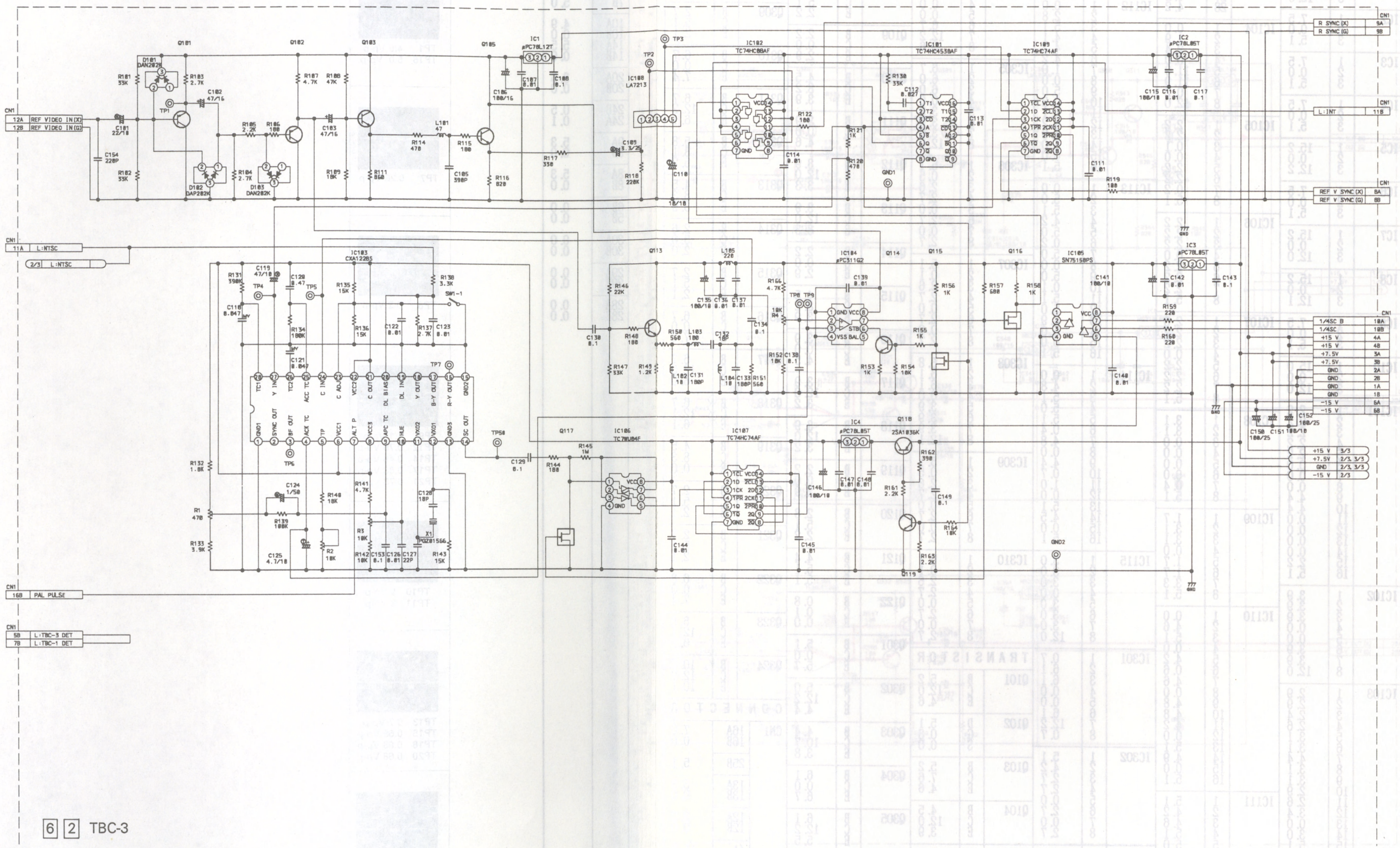
TP13 0.7 Vp-p
TP15 0.68 Vp-p
TP18 0.68 Vp-p
TP20 0.68 Vp-p



TP19 0.96 Vp-p
TP22 0.98 Vp-p

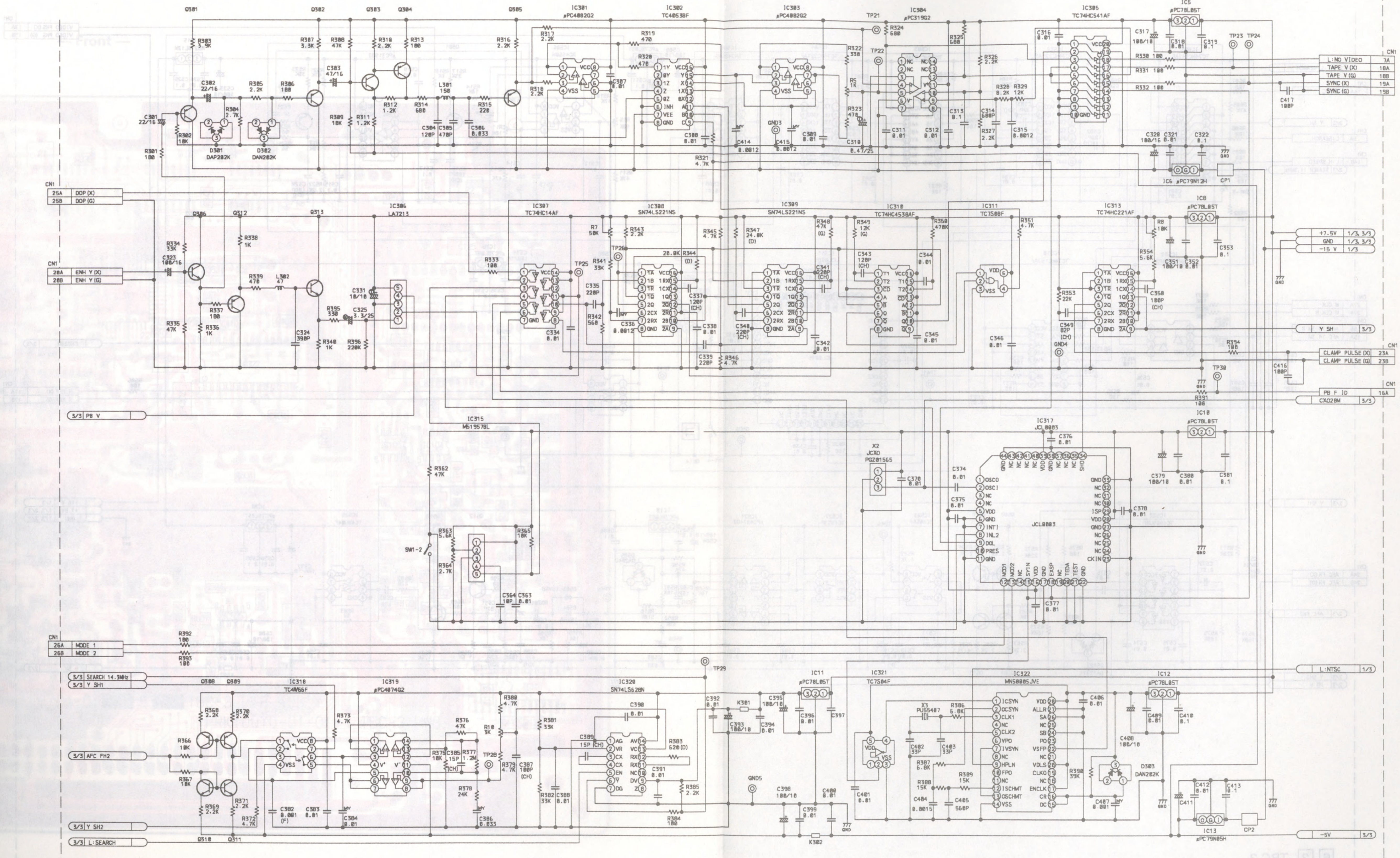
3.8 TBC-3 SCHEMATIC DIAGRAM

— DIAGRAM (1/3) —



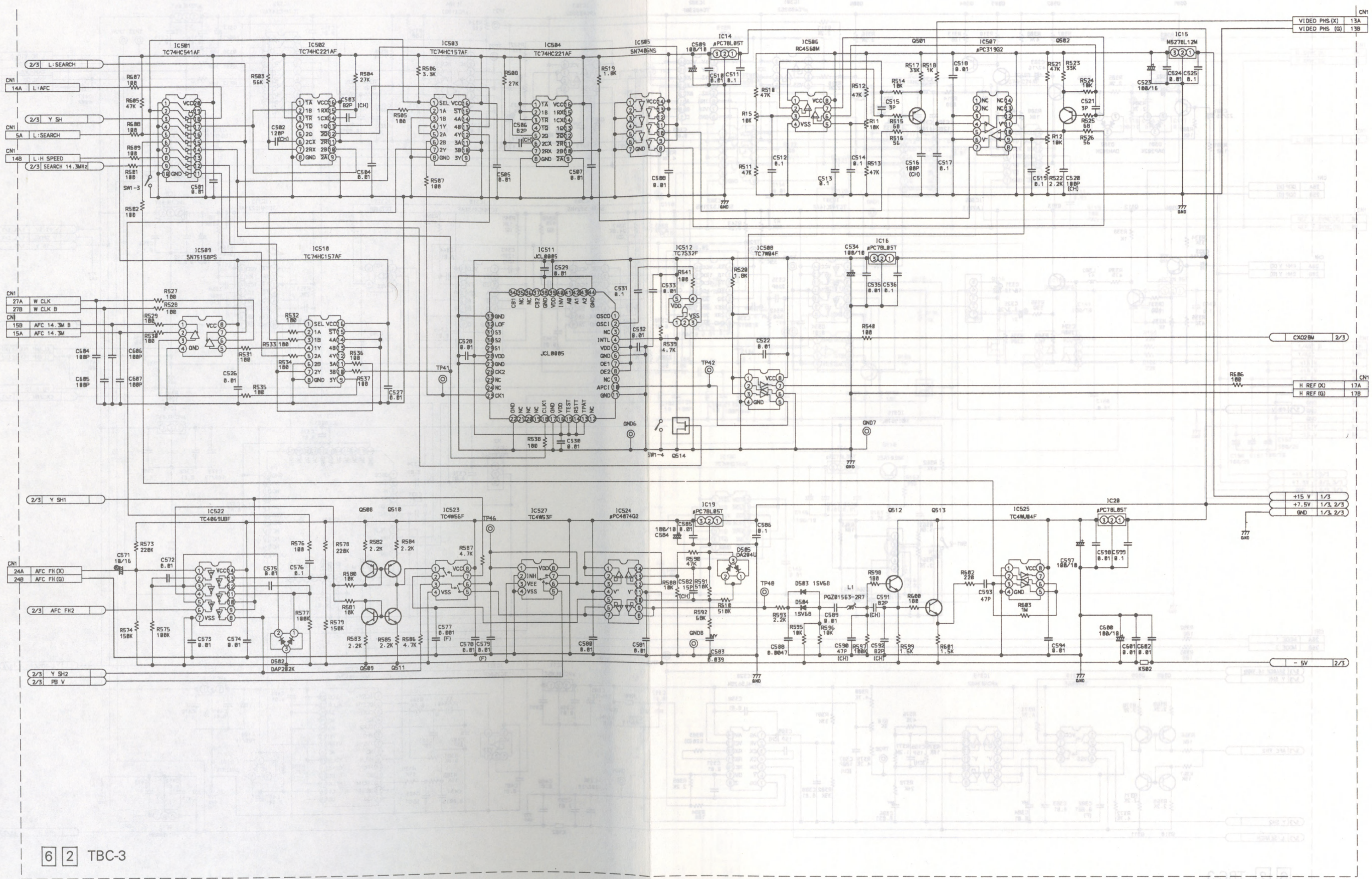
6 2 TBC-3

— DIAGRAM (2/3) —



6 2 TBC-3

SYMBOL	No.	PB
I C		
IC1	1	15.2
	2	0.0
	3	12.0
IC2	1	7.5
	2	0.0
	3	5.1
IC3	1	7.5
	2	0.0
	3	5.1
IC4	1	1.1
	2	0.0
	3	0.6
IC5	1	7.5
	2	0.0
	3	5.1
IC6	1	0.0
	2	-15.1
	3	-11.9
IC8	1	7.5
	2	0.0
	3	5.1
IC10	1	7.5
	2	0.0
	3	5.1
IC11	1	7.5
	2	0.0
	3	5.1
IC12	1	7.6
	2	0.0
	3	5.0
IC13	1	0.0
	2	-14.6
	3	-5.0
IC14	1	7.5
	2	0.0
	3	3.6
IC15	1	15.2
	2	0.0
	3	12.0
IC16	1	7.5
	2	0.0
	3	5.1
IC19	1	7.5
	2	0.0
	3	5.1
IC20	1	7.5
	2	0.0
	3	5.1
IC101	1	0.0
	2	5.1
	3	5.1
	4	5.0
	5	5.1
	6	0.0
	7	5.1
	8	0.0
	9	5.1
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	5.1
	15	0.0
	16	5.1
IC102	1	0.2
	2	0.0
	3	0.1
	4	0.0
	5	0.0
	6	0.0
	7	0.0
IC102	8	5.0
	9	5.1
	10	5.1
	11	5.1
	12	5.1
	13	5.1
	14	5.1
IC103	1	0.0
	2	1.1
	3	1.1
	4	0.7
	5	0.0
	6	1.1
	7	1.1
	8	1.1
	9	0.8
	10	0.6
	11	0.5
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	0.0
	17	0.0
	18	0.0
	19	0.0
	20	0.1
	21	1.1
	22	1.1
	23	0.6
	24	0.6
	25	0.0
	26	0.5
	27	0.6
	28	1.1
IC104	1	0.0
	2	3.6
	3	0.7
	4	0.0
	5	11.8
	6	9.2
	7	5.0
	8	12.0
IC105	1	3.9
	2	0.1
	3	0.0
	4	0.0
	5	1.3
	6	0.1
	7	3.6
	8	5.1
IC106	1	0.0
	2	1.1
	3	1.1
	4	0.0
	5	0.0
	6	0.0
	7	1.1
	8	1.1
IC107	1	1.1
	2	1.1
	3	1.1
	4	1.1
	5	0.0
	6	1.1
	7	0.0
	8	0.0
	9	1.3
	10	1.1
	11	0.0
	12	0.0
	13	1.1
	14	1.1
IC108	1	5.1
	2	5.1
	3	0.0
	4	5.1
	5	2.7
IC109	1	5.1
	2	5.1
	3	5.0
	4	5.1
	5	0.0
IC109	6	5.1
	7	0.0
	8	0.0
	9	5.1
	10	0.0
	11	5.1
	12	5.1
	13	5.1
	14	5.1
IC301	1	-0.4
	2	-0.4
	3	-0.4
	4	-11.9
	5	0.0
	6	0.0
	7	4.6
	8	5.1
IC302	1	-0.5
	2	-1.3
	3	0.0
	4	0.0
	5	0.1
	6	0.0
	7	-11.9
	8	0.0
	9	5.1
	10	0.2
	11	0.4
	12	-0.8
	13	-0.5
	14	-0.8
	15	-1.3
	16	5.1
IC303	1	-1.3
	2	-1.3
	3	-1.3
	4	-11.9
	5	-0.8
	6	-0.8
	7	-0.8
	8	5.1
IC304	1	0.3
	2	0.0
	3	0.0
	4	-0.4
	5	-1.1
	6	-11.9
	7	5.0
	8	0.0
	9	3.6
	10	2.6
	11	5.1
	12	4.7
	13	0.0
	14	0.0
IC305	1	0.0
	2	5.0
	3	5.0
	4	4.7
	5	4.7
	6	4.7
	7	0.0
	8	0.0
	9	0.0
	10	0.0
	11	5.1
	12	0.0
	13	0.0
	14	4.7
	15	4.7
	16	4.7
	17	5.0
	18	5.1
	19	0.0
	20	5.1
IC306	1	3.0
	2	4.6
	3	0.0
	4	5.0
	5	5.1
IC307	1	0.0
	2	5.1
	3	5.1
IC307	4	0.0
	5	0.0
	6	0.1
	7	0.0
	8	0.5
	9	4.6
	10	0.5
	11	4.6
	12	4.6
	13	4.6
	14	5.1
IC308	1	3.0
	2	0.2
	3	3.7
	4	4.9
	5	3.0
	6	2.1
	7	-0.5
	8	0.0
	9	0.0
	10	3.7
	11	5.1
	12	1.5
	13	0.3
	14	4.9
	15	0.8
	16	5.1
IC309	1	0.0
	2	4.9
	3	5.1
	4	3.7
	5	0.4
	6	4.8
	7	0.7
	8	0.0
	9	2.6
	10	0.7
	11	5.1
	12	4.0
	13	0.7
	14	4.5
	15	0.5
	16	5.1
IC310	1	0.0
	2	5.0
	3	5.1
	4	4.9
	5	5.1
	6	0.2
	7	4.9
	8	0.0
	9	0.0
	10	5.1
	11	5.1
	12	4.9
	13	5.1
	14	1.8
	15	0.0
	16	5.1
IC311	1	0.5
	2	0.2
	3	0.0
	4	0.2
	5	5.1
IC313	1	5.0
	2	5.1
	3	5.1
	4	5.0
	5	0.3
	6	0.0
	7	4.9
	8	0.0
	9	0.2
	10	5.1
	11	5.1
	12	4.9
	13	0.2
	14	0.0
	15	5.0
	16	5.1
IC315	1	5.1
	2	1.7
	3	0.0
	4	1.3
IC315	5	5.1
IC317	1	2.4
	2	2.4
	3	0.0
	4	0.0
	5	5.0
	6	0.0
	7	0.0
	8	5.0
	9	5.0
	10	0.0
	11	0.0
	12	0.1
	13	0.1
	14	0.1
	15	4.7
	16	5.0
	17	0.0
	18	4.7
	19	0.0
	20	0.0
	21	0.0
	22	0.0
	23	0.0
	24	0.0
	25	0.0
	26	0.0
	27	0.0
	28	5.0
	29	0.2
	30	0.2
	31	0.2
	32	0.2
	33	0.0
	34	4.9
	35	0.0
	36	0.0
	37	0.0
	38	0.0
	39	5.0
	40	0.0
	41	0.0
	42	0.0
	43	0.0
	44	0.0
IC318	1	0.0
	2	0.0
	3	-4.7
	4	-4.9
	5	0.2
	6	0.2
	7	4.8
	8	5.1
IC319	1	0.2
	2	0.2
	3	0.2
	4	5.1
	5	0.0
	6	0.2
	7	0.2
	8	0.9
	9	0.9
	10	0.8
	11	-4.9
	12	0.2
	13	0.2
	14	0.9
IC320	1	0.0
	2	2.1
	3	1.7
	4	2.3
	5	3.6
	6	4.3
	7	0.0
	8	0.1
	9	5.1
	10	0.0
	11	0.8
	12	1.2
	13	2.8
	14	5.1
IC321	1	0.0
	2	4.7
	3	0.0
	4	0.5
IC321	5	5.1
IC322	1	0.5
	2	0.5
	3	2.1
	4	0.0
	5	2.3
	6	0.1
	7	0.1
	8	0.1
	9	0.2
	10	0.0
	11	0.0
	12	0.5
	13	0.1
	14	0.0
	15	0.8
	16	0.8
	17	5.1
	18	0.0
	19	2.7
	20	5.1
	21	0.0
	22	0.0
	23	0.0
	24	0.0
	25	0.0
	26	0.0
	27	0.0
	28	5.1
IC501	1	0.0
	2	3.6
	3	0.2
	4	0.0
	5	4.4
	6	2.4
	7	0.0
	8	4.1
	9	4.3
	10	0.0
	11	3.6
	12	3.6
	13	0.0
	14	2.0
	15	3.6
	16	0.0
	17	0.1
	18	3.6
	19	0.0
	20	3.6
IC502	1	0.0
	2	0.1
	3	3.3
	4	3.1
	5	0.5
	6	0.0
	7	3.0
	8	0.0
	9	0.0
	10	0.1
	11	3.3
	12	2.8
	13	0.2
	14	0.0
	15	3.2
	16	3.2
IC503	1	3.3
	2	1.9
	3	0.0
	4	0.2
	5	0.2
	6	2.5
	7	1.2
	8	0.0
	9	0.2
	10	0.0
	11	0.0
	12	0.3
	13	0.2
	14	0.2
	15	0.0
	16	3.5
IC504	1	3.5
	2	3.5
	3	3.5
	4	3.5
IC504	5	0.2
	6	0.0
	7	3.4
	8	0.0
	9	0.0
	10	3.1
	11	3.5
	12	3.3
	13	0.0
	14	0.0
	15	3.3
	16	3.3
IC505	1	0.0
	2	0.2
	3	0.0
	4	0.2
	5	0.0
	6	0.2
	7	0.0
	8	0.8
	9	3.1
	10	0.8
	11	3.1
	12	0.1
	13	3.6
	14	3.6
IC506	1	5.4
	2	6.0
	3	6.0
	4	0.0
	5	6.0
	6	6.0
	7	5.4
	8	12.0
IC507	1	0.3
	2	0.0
	3	0.0
	4	3.5
	5	0.8
	6	0.0
	7	3.2
	8	0.0
	9	1.5
	10	0.8
	11	12.0
	12	4.6
	13	0.0
	14	0.0
IC508	1	4.5
	2	5.0
	3	4.5
	4	0.0
	5	0.6
	6	0.0
	7	0.6
	8	5.0
IC509	1	1.1
	2	1.1
	3	1.3
	4	0.0
	5	1.2
	6	0.9
	7	1.1
	8	3.6
IC510	1	3.3
	2	0.2
	3	1.0
	4	1.0
	5	3.3
	6	0.0
	7	0.2
	8	0.0
	9	1.2
	10	1.9
	11	0.2
	12	0.2
	13	0.0
	14	0.0
	15	0.0
	16	3.3
IC511	1	2.5
	2	2.4
	3	0.0
IC511	4	0.1
	5	5.0
	6	0.0
	7	5.0
	8	5.0
	9	0.0
	10	0.0
	11	0.0
	12	0.1
	13	5.0
	14	5.0
	15	5.0
	16	5.0
	17	0.0
	18	2.1
	19	0.0
	20	0.0
	21	0.0
	22	0.0
	23	2.4
	24	0.0
	25	0.0
	26	2.4
	27	0.0
	28	0.0
	29	5.0
	30	2.6
	31	2.5
	32	5.0
	33	0.0
	34	2.4
	35	0.0
	36	0.0
	37	2.4
	38	0.0
	39	5.0
	40	2.5
	41	2.5
	42	2.5
	43	2.6
	44	0.0
IC512	1	0.1
	2	2.6
	3	0.0
	4	2.4
	5	5.1
IC522	1	-1.3
	2	1.8
	3	-0.9
	4	0.2
	5	-0.9
	6	0.2
	7	-4.9
	8	-4.7
	9	4.8
	10	4.8
	11	-4.4
	12	4.0
	13	-0.9
	14	5.1
IC523	1	0.0
	2	0.0
	3	-4.7
	4	-4.9
	5	0.1
	6	0.0
	7	0.0
	8	5.1
IC524	1	0.0
	2	0.0
	3	0.0
	4	5.1
	5	0.0
	6	0.1
	7	0.0
	8	0.0
	9	0.0
	10	0.0
	11	-4.9
	12	0.0
	13	0.0
	14	0.0
IC525	1	0.0
	2	2.5
	3	2.6



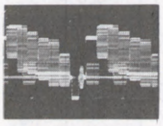
6 2 TBC-3

— TBC-3 <62> DC voltage (2/2) —

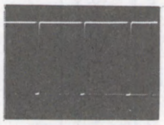
SYMBOL	No.	PB
IC525	4	0.0
	5	2.6
	6	2.6
	7	5.1
	8	5.1
IC527	1	.
	2	.
	3	.
	4	.
	5	.
	6	.
	7	.
	8	.
TRANSISTOR		
Q101	B	6.2
	C	0.0
	E	6.8
Q102	B	0.1
	C	0.0
	E	0.8
Q103	B	3.2
	C	12.0
	E	2.6
Q105	B	2.6
	C	12.0
	E	2.0
Q113	B	2.7
	C	5.0
	E	2.1
Q114	B	4.2
	C	9.2
	E	3.5
Q115	D	4.6
	G	0.0
	S	0.0
Q116	D	0.2
	G	5.0
	S	0.0
Q117	D	0.0
	G	5.0
	S	0.0
Q118	B	7.6
	C	0.6
	E	7.6
Q119	B	0.0
	C	7.5
	E	0.0
Q301	B	0.1
	C	-12.1
	E	0.7
Q302	B	0.0
	C	0.1
	E	0.7
Q303	B	-2.2
	C	4.3
	E	-2.8
Q304	B	4.3
	C	-1.1
	E	4.9
Q305	B	-1.0
	C	-11.9
	E	-0.4
Q306	B	2.7
	C	5.0
	E	2.1

SYMBOL	No.	PB
Q308	B	4.1
	C	4.1
	E	4.5
Q309	B	4.1
	C	0.0
	E	4.5
Q310	B	-3.8
	C	-3.8
	E	-4.3
Q311	B	-4.0
	C	-0.1
	E	-4.4
Q312	B	2.1
	C	0.0
	E	2.7
Q313	B	2.7
	C	5.1
	E	2.1
Q501	B	5.4
	C	0.7
	E	6.0
Q502	B	5.4
	C	0.0
	E	6.0
Q508	B	4.1
	C	4.1
	E	4.5
Q509	B	-3.8
	C	-3.8
	E	-4.3
Q510	B	4.1
	C	0.0
	E	4.5
Q511	B	-4.0
	C	-0.1
	E	-4.4
Q512	B	-1.2
	C	5.1
	E	-1.5
Q513	B	-1.6
	C	5.1
	E	-2.0
Q514	D	0.1
	G	3.6
	S	0.0

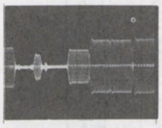
SYMBOL	No.	PB
CONNECTOR		
CN1	12A	0.0
	12B	0.0
	11A	0.2
	16B	1.1
	5B	0.0
	7B	0.0
	9A	5.1
	9B	0.0
	11B	0.1
	8A	5.1
	8B	0.0
	10A	2.6
	10B	1.2
	4A	15.1
	4B	15.1
	3A	7.5
	3B	7.5
	2A	0.0
	2B	0.0
	1A	0.0
	1B	0.0
	6A	-15.1
	6B	-15.1
	25A	0.0
	25B	0.0
	20A	3.6
	20B	0.0
	26A	0.2
	26B	0.1
	7A	5.0
	18A	5.0
	18B	0.0
	19A	4.7
	19B	0.0
	23A	0.3
	23B	0.0
	16A	0.0
	14A	3.6
	5A	4.7
	14B	4.1
	27A	0.9
	27B	0.8
	15B	1.1
	15A	1.1
	24A	2.0
	24B	0.0
	13A	3.5
	13B	0.0
	17A	0.6
	17B	0.0



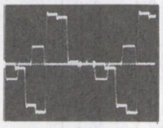
TP1 1.0 Vp-p



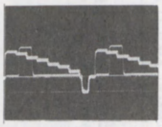
TP2 5 Vp-p
TP3 5 Vp-p
TP4 1.5 Vp-p
TP6 5 Vp-p
TP24 5.1 Vp-p
TP25 5.0 Vp-p



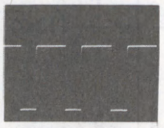
TP5 0.1 Vp-p



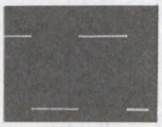
TP7 0.7 Vp-p



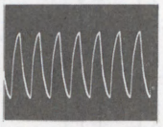
TP21 1.6 Vp-p



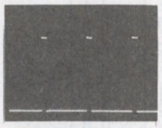
TP26 4.4 Vp-p



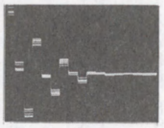
TP30 5 Vp-p



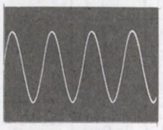
TP41 4.6 Vp-p



TP42 5.0 Vp-p



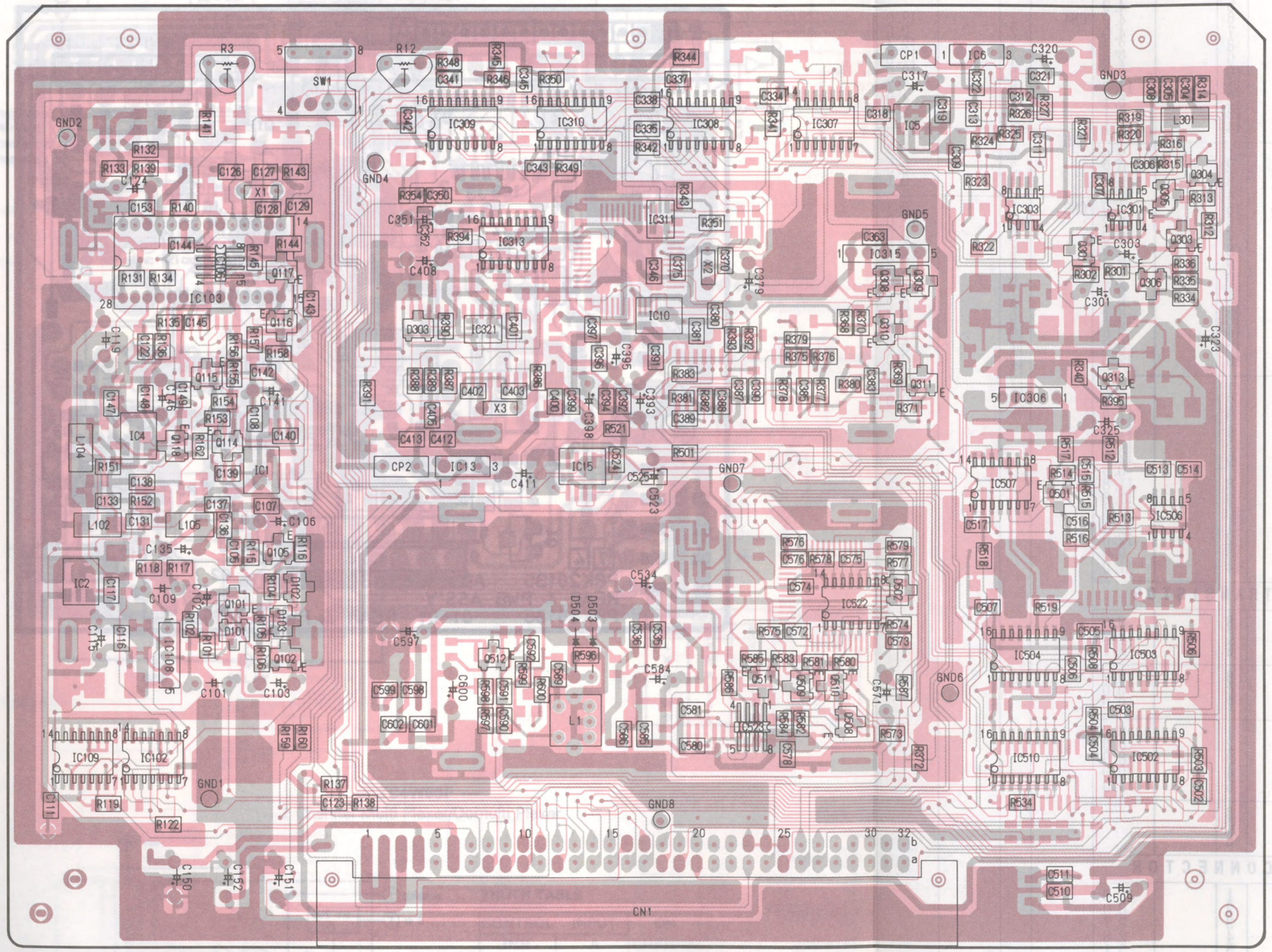
TP46



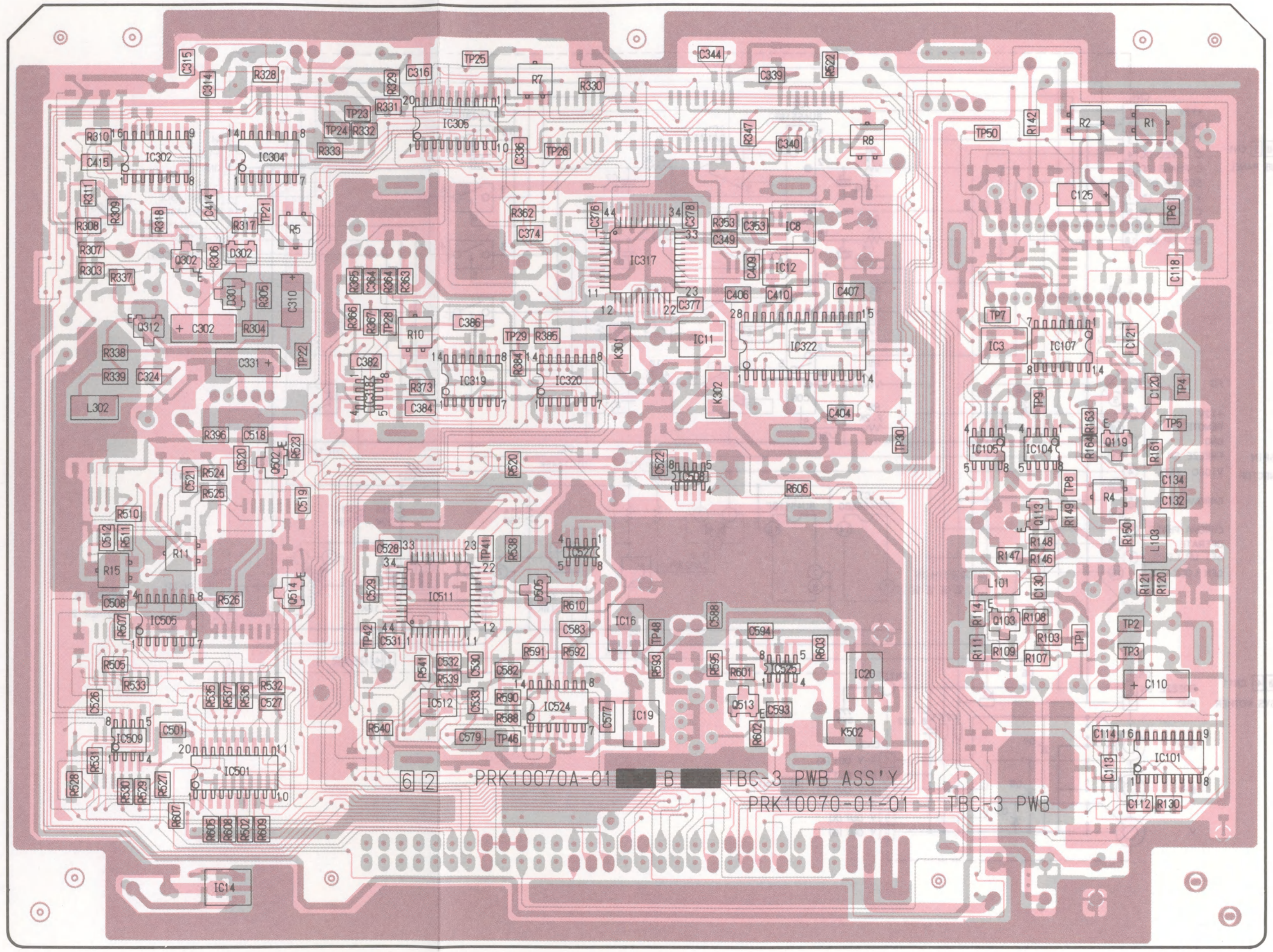
TP50 0.5 Vp-p

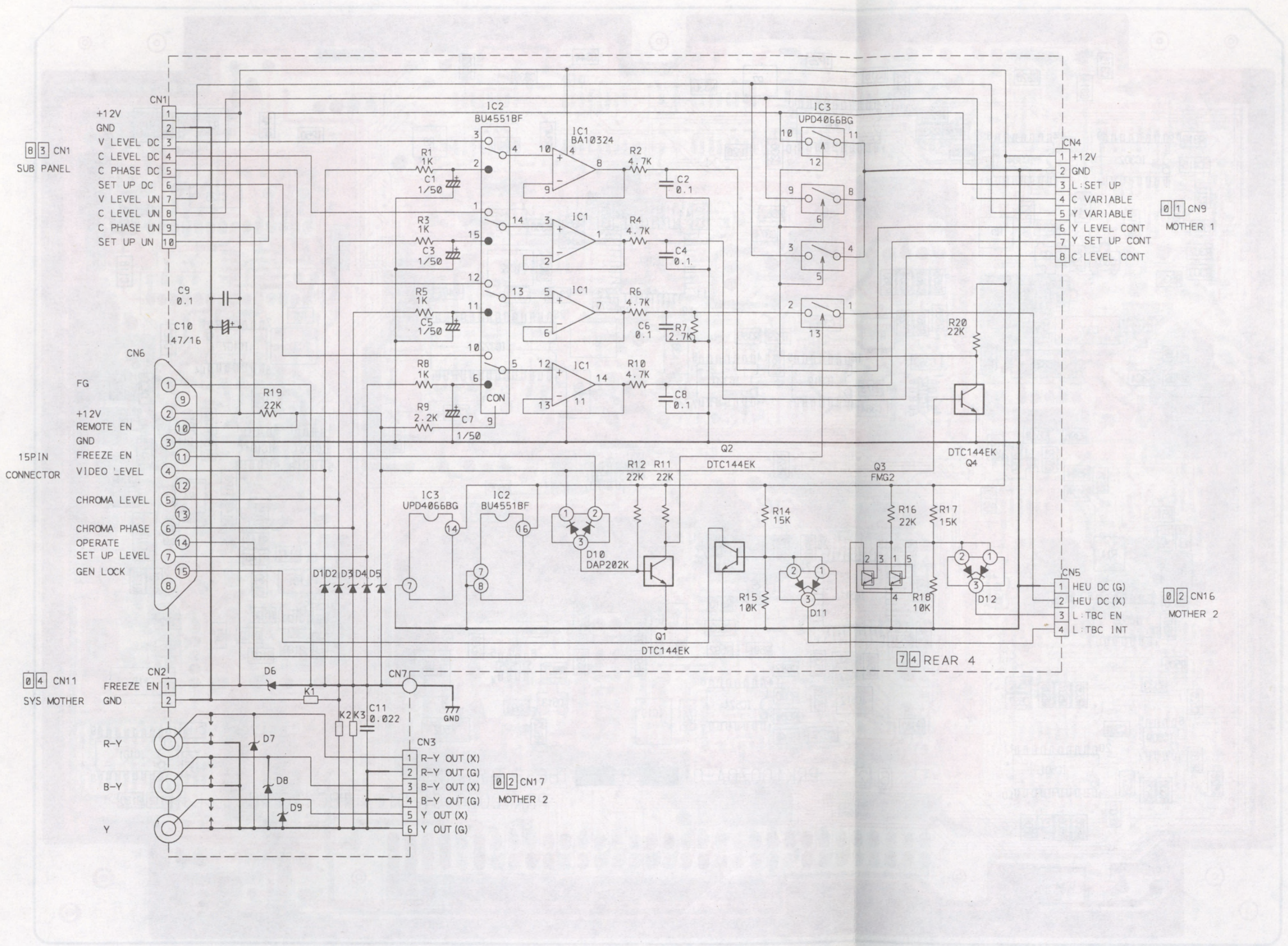
3.9 TBC-3 CIRCUIT BOARD

— Rear —



— Front —

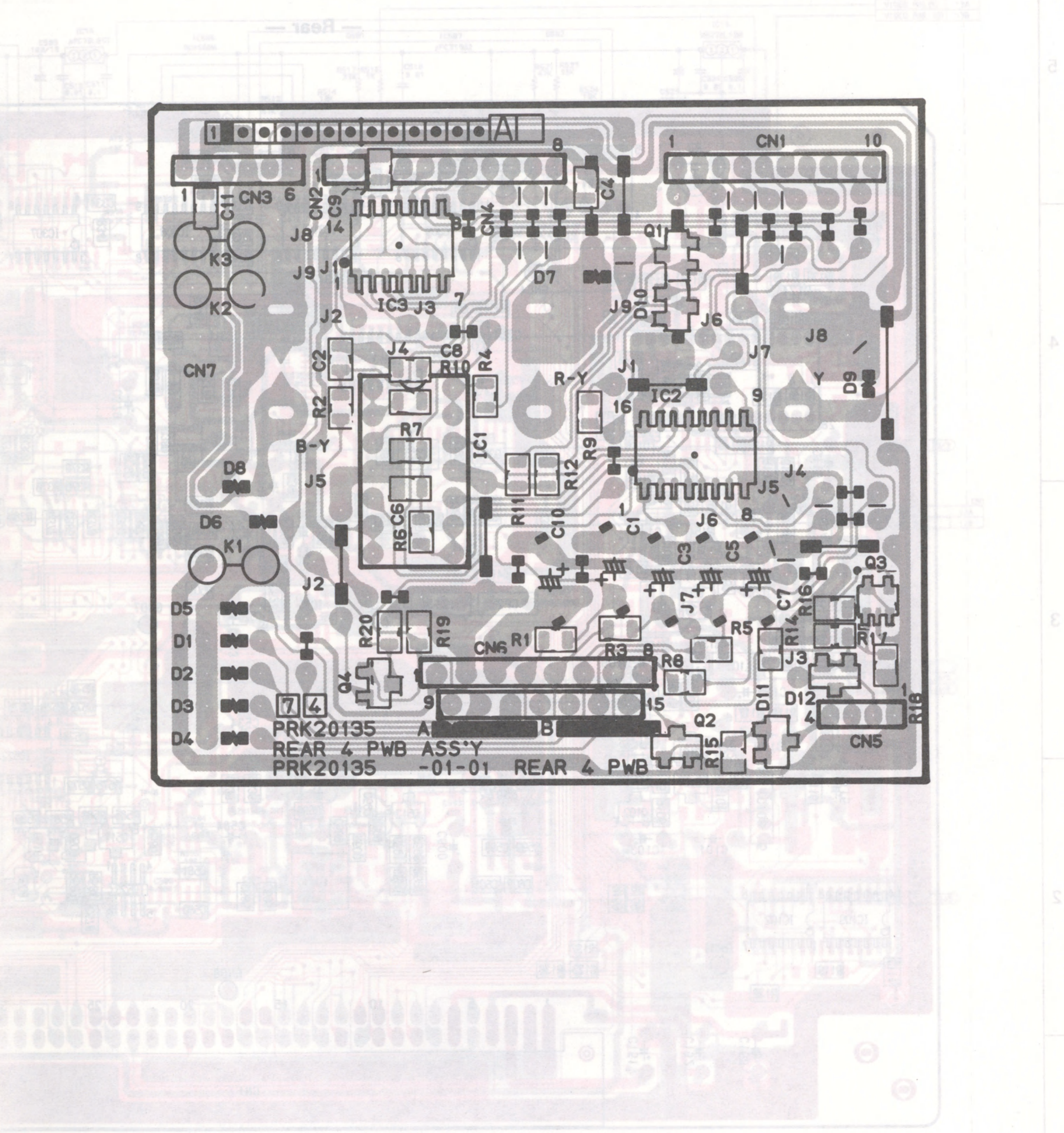




— DC voltage —

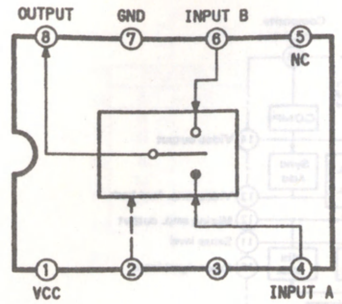
SYMBOL	No.	REC	PB
INTEGRATED CIRCUIT			
IC1	1		9.7
	2		9.7
	3		9.7
	4		0.0
	5		4.9
	6		4.9
	7		4.9
	8		2.6
	9		2.6
	10		2.6
	11		12.0
	12		5.1
	13		5.1
	14		5.1
IC2	1		2.6
	2		0.2
	3		9.7
	4		9.7
	5		4.9
	6		0.2
	7		0.0
	8		0.0
	9		12.0
	10		4.9
	11		0.1
	12		5.1
	13		5.1
	14		2.6
	15		0.2
	16		12.0
IC3	1		2.2
	2		1.9
	3		11.9
	4		11.9
	5		12.0
	6		12.0
	7		0.0
	8		11.8
	9		11.8
	10		12.4
	11		12.4
	12		12.0
	13		0.0
	14		11.9
TRANSISTOR			
Q1	B		0.0
	C		8.2
	E		8.1
Q2	B		0.7
	C		0.0
	E		0.0
Q3	1		8.0
	2		0.0
	3		8.0
	4		0.0
	5		1.0
Q4	B		.
	C		.
	E		.
CONNECTOR			
CN1	1		12.0
	2		0.0
	3		9.7
	4		2.6
	5		5.1
	6		4.9
	7		11.9
	8		11.8
	9		7.9
	10		12.4
CN2	1		5.0
	2		0.0

SYMBOL	No.	REC	PB
CN3	1		0.0
	2		0.0
	3		0.0
	4		0.0
	5		0.0
	6		0.0
CN4	1		12.0
	2		0.0
	3		12.4
	4		11.8
	5		12.0
	6		9.7
	7		4.9
	8		2.6
CN5	1		0.0
	2		2.2
	3		0.5
	4		0.1
CN6	1		0.3
	2		12.0
	3		0.0
	4		0.2
	5		0.2
	6		0.1
	7		0.2
	8		0.2
	9		0.2
	10		12.0
	11		5.0
	12		0.0
	13		0.0
	14		0.0
	15		0.0

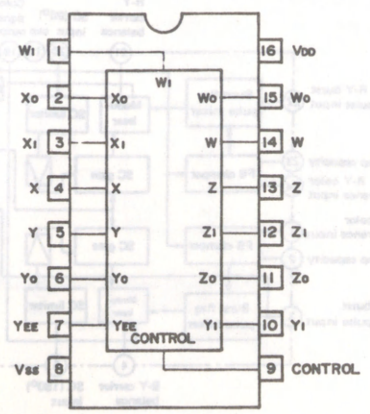


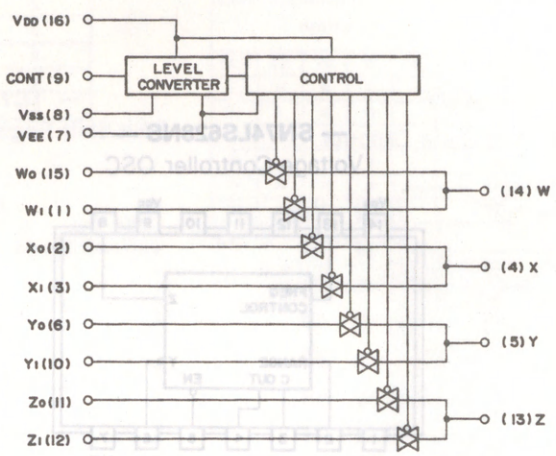
3.11 IC BLOCK DIAGRAMS

— AN6308S —
Analog Switch



— BU4551BF —
Quad 2 Input Analog Multiplexer/Demultiplexer

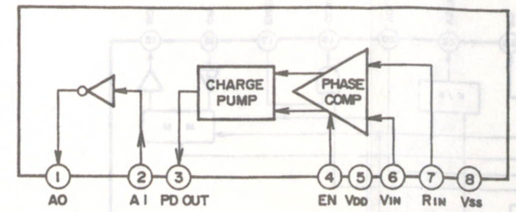




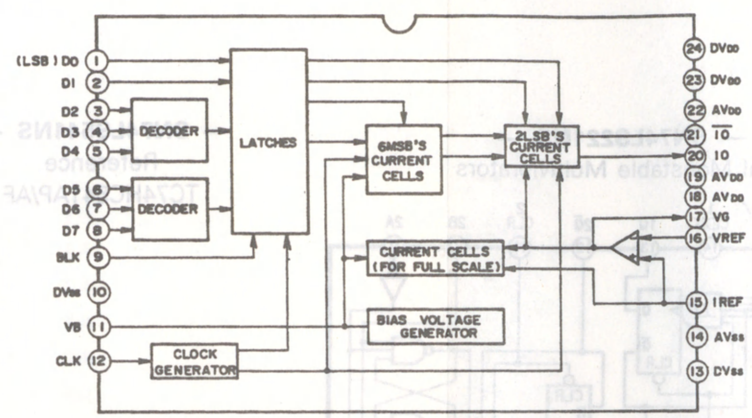
TRUTH TABLE

CONTROL	ON
0	W0, X0, Y0, Z0
1	W1, X1, Y1, Z1

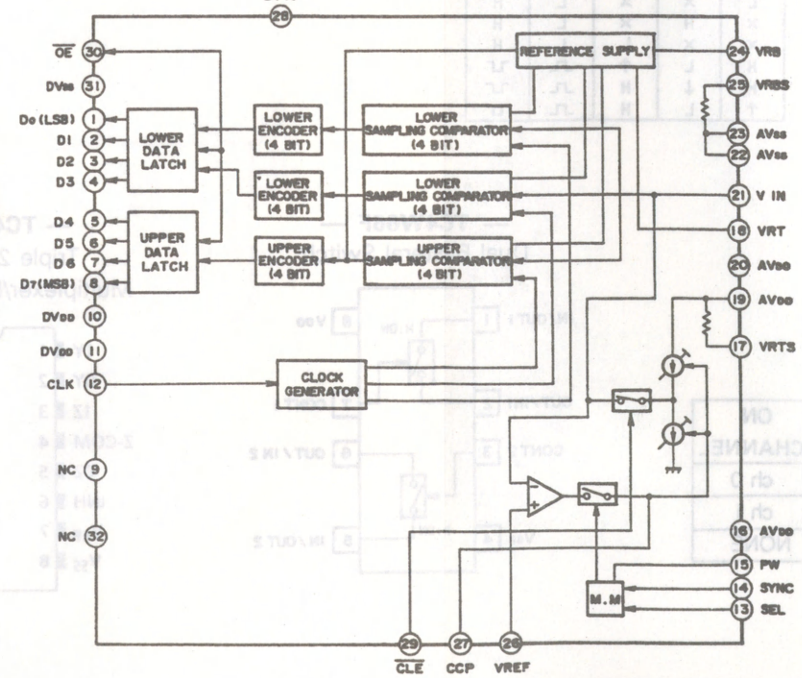
— CX23065A —
Phase Comparator



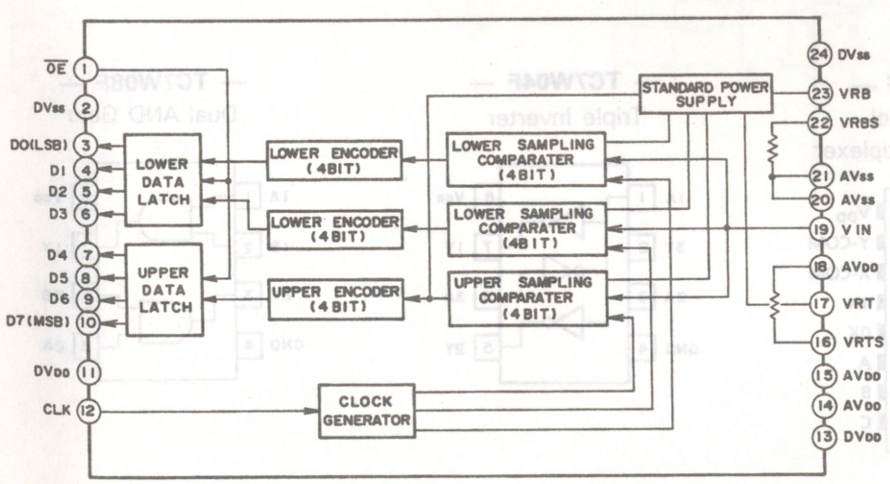
— CXD1171M —
D/A Converter



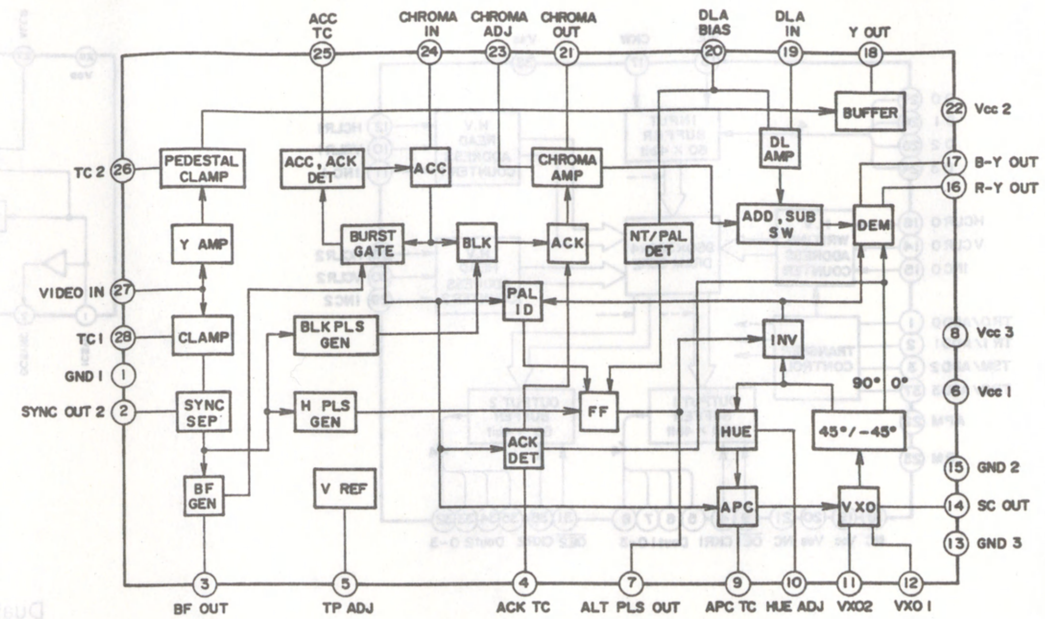
— CXD1176Q —
A/D Converter



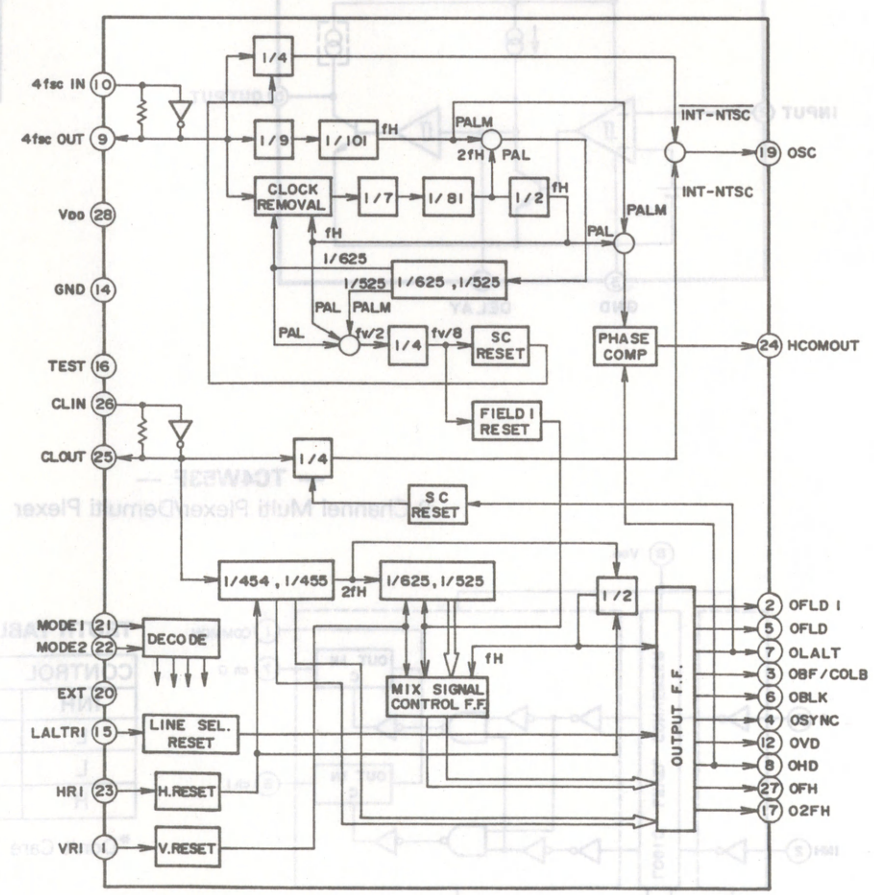
— CXD1175AM —
A/D Converter



— CXA1228S —
NTSC/PAL Decoder

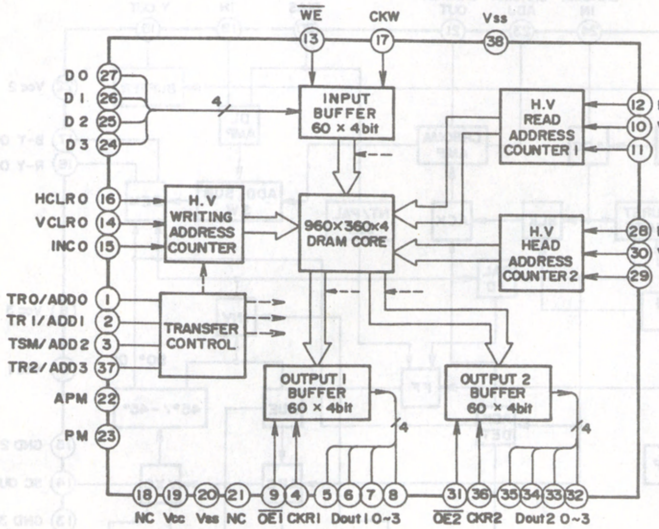


— CXD1217M —
Sync Generator

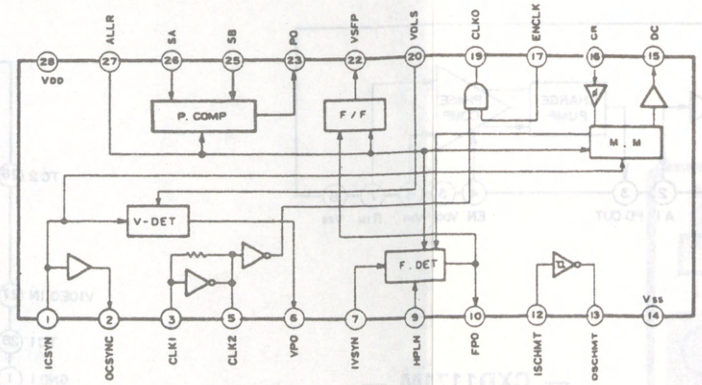


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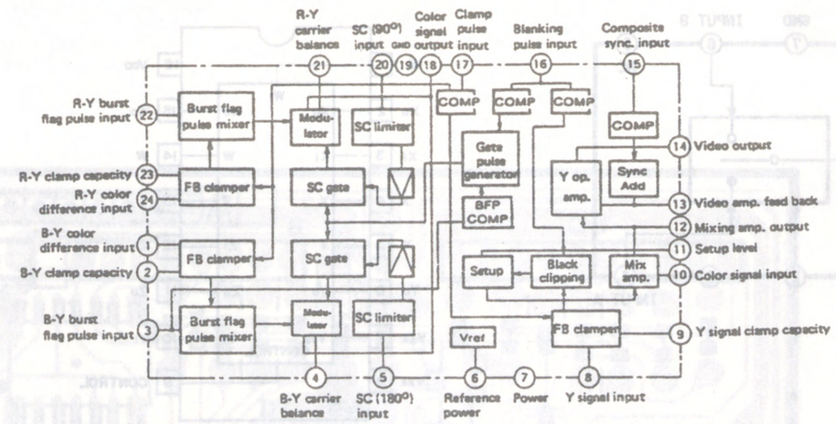
— CXK1206M —
Field Memory



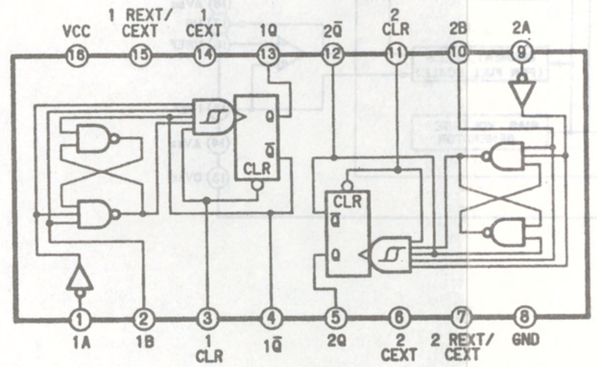
— MN50005JVES —
Frame Detector



— M51272FP —
NTSC Encoder



— SN74LS221NS —
Dual Monstable Multivibrators

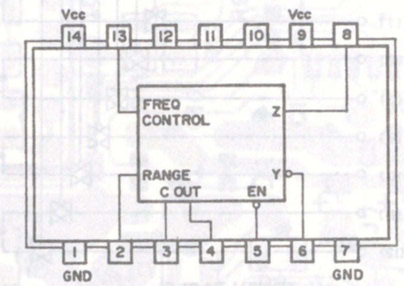


TRUTH TABLE

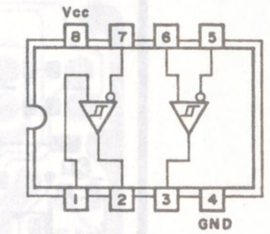
INPUTS			OUTPUTS	
CLEAR	A	B	Q	Q̄
L	X	X	L	H
X	H	X	L	H
X	X	L	L	H
H	L	↑	⎍	⊔
H	↓	H	⎍	⊔
↑	L	H	⎍	⊔

— SN74LS541NS —
Reference
TC74HC541AP/AF

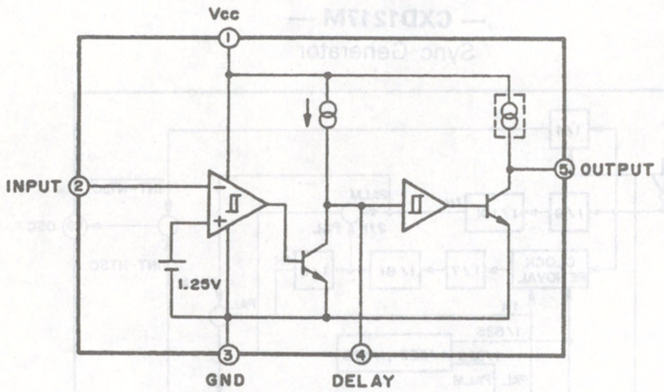
— SN74LS628NS —
Voltage-Controller OSC.



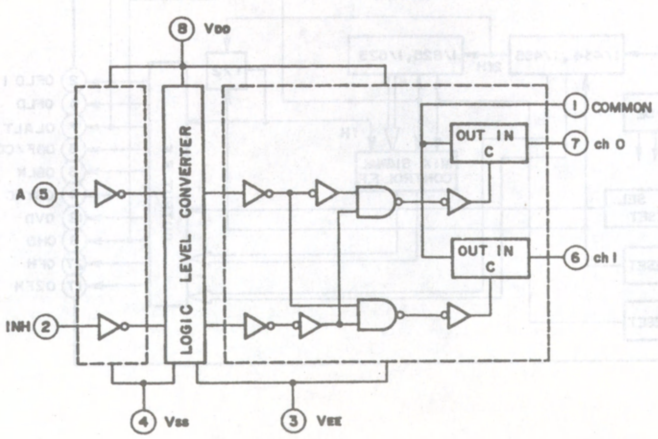
— SN75157PS —
Dual Receiver



— M51957BL —
Voltage Detector/System Reset



— TC4W53F —
2 Channel Multi Plexer/Demulti Plexer

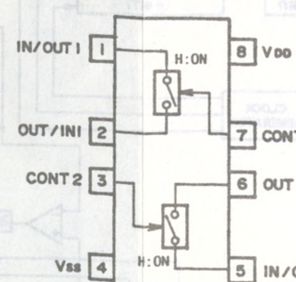


TRUTH TABLE

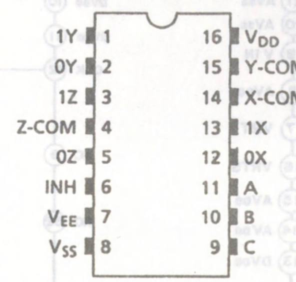
CONTROL	INPUT	ON
INH	A	CHANNEL
L	L	ch 0
L	H	ch 1
H	*	NONE

*Don't Care

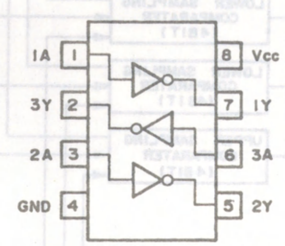
— TC4W66F —
Dual Bilateral Switch



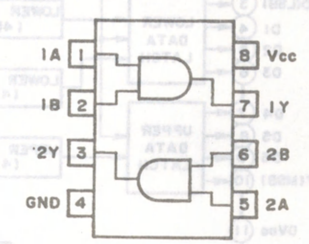
— TC4053BF —
Triple 2-channel
Multiplexer/Demultiplexer



— TC7W04F —
Triple Inverter

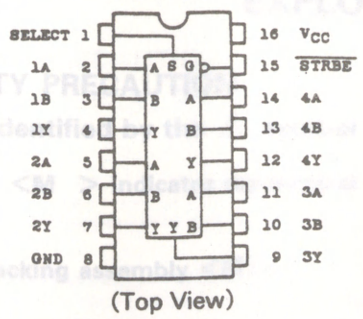


— TC7W08F —
Dual AND Gate



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— TC74HC157AF —
Quad 2-Channel Multiplexer



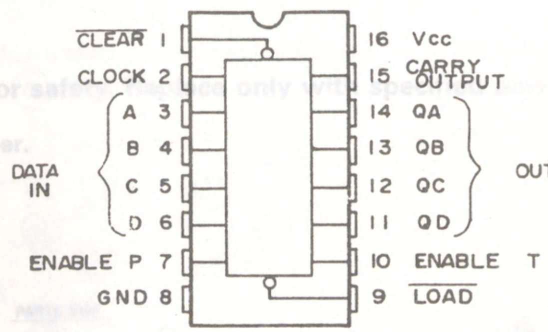
(Top View)

TRUTH TABLE

INPUTS				OUTPUT
STROBE	SELECT	A	B	Y
H	*	*	*	L
L	L	L	*	L
L	L	H	*	H
L	H	*	L	L
L	H	*	H	H

* Don't Care

— TC74HC163AF —
Synchronous Presettable 4-Bit Counter, Binary Synchronous Clear



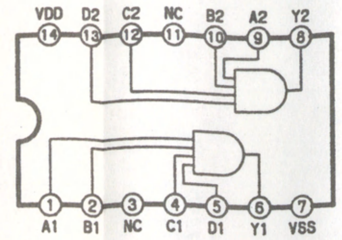
(TOP VIEW)

TRUTH TABLE

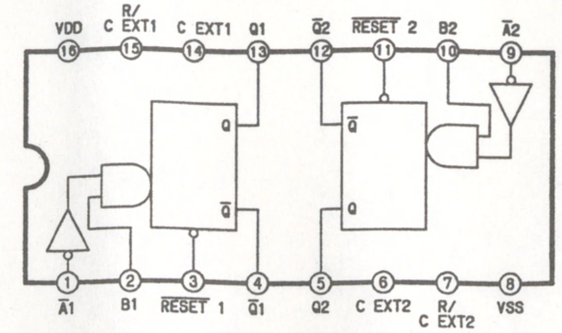
INPUTS					OUTPUTS				FUNCTION
CLR	LD	PE	TE	CK	Q_A	Q_B	Q_C	Q_D	
L	*	*	*		L	L	L	L	REST TO "0"
H	L	*	*		A	B	C	D	PRESET DATA
H	H	*	L		NO CHANGE				NO COUNT
H	H	L	*		NO CHANGE				NO COUNT
H	H	H	H		COUNT UP				COUNT
*	*	*	*		NO CHANGE				NO COUNT

Note * : Don't Care
A, B, C, D : Logic Level of Data Inputs
Carry : $CARRY = TE \cdot Q_A \cdot Q_B \cdot Q_C \cdot Q_D$

— TC74HC21AF —
Dual 4-Input AND Gate



— TC74HC221AF —
Dual Monostable Multivibrtor



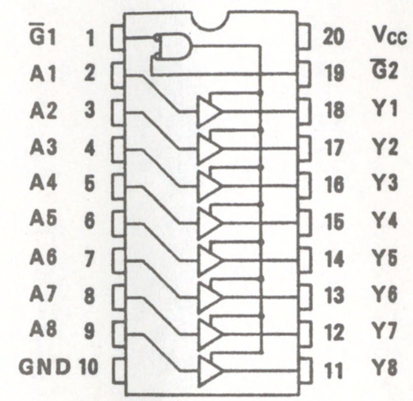
(TOP VIEW)

TRUTH TABLE

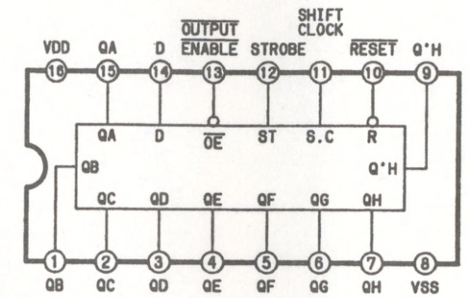
INPUTS			OUTPUTS	
CLEAR	A	B	Q	$\bar{Q}$
L	×	×	L	H
×	H	×	L	H
×	×	L	L	H
H	L	↑	⊓	⊔
H	↓	H	⊓	⊔
↑	L	H	⊓	⊔

— TC74HC4053AF —
Reference
TC4053BP/BF

— TC74HC541AF —
Non-Inverted, 3 State Outputs



— TC74HC595AF —
8-Bit Shift Register With Output Latch



QA～QH:PARALLEL OUTPUTS
Q'H :SERIAL OUTPUT

TRUTH TABLE

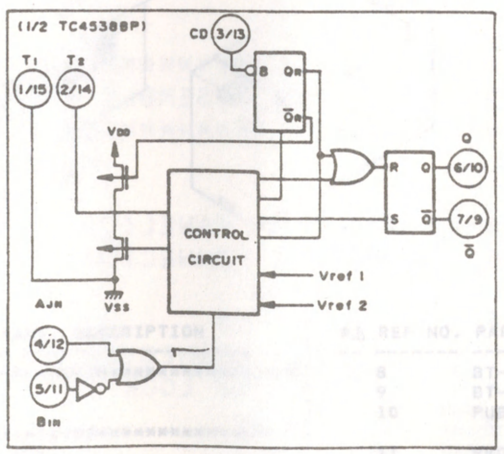
RCK	SCK	SCLR	G	FUNCTION
×	×	×	1	QA THRU QH-TRI-STATE
×	×	L	×	SHIFT REGISTER CLEARED QH'-0
×	↑	H	×	SHIFT REGISTER CLOCKED QN-Qn-1.Q0-SER
↑	×	H	×	CONTENTS OF SHIFT REGISTER TRANSFERRED TO OUTPUT LATCHES

— TC74HC4538AF —
Dual Precision Retriggerable/Resettable Monostable Multivibrator

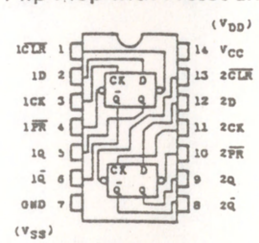
TRUTH TABLE

INPUT			OUTPUT		NOTE
AIN	BIN	CD	Q	$\bar{Q}$	
↑	H	H	⊓	⊔	OUTPUT ENABLE
↑	L	H	L	H	INHIBIT
H	↓	H	L	H	INHIBIT
L	↓	H	⊓	⊔	OUTPUT ENABLE
*	*	L	L	H	INHIBIT

* Don't Care



— TC74HC74AF —
Dual D Flip-Flop with Preset and Clear

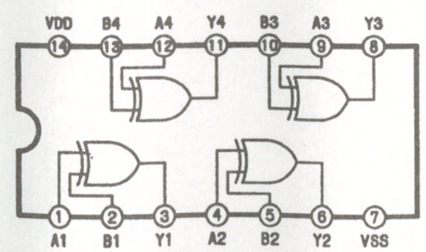


TRUTH TABLE

INPUTS				OUTPUTS		FUNCTION
CLR	PR	D	CK	Q	$\bar{Q}$	
L	H	•	•	L	H	CLEAR
H	L	•	•	H	L	PRESET
L	L	•	•	H	H	—
H	H	L	↑	L	H	—
H	H	H	↑	H	L	—
H	H	•	↓	Qn	$\bar{Q}$n	NO CHANGE

• Don't care

— TC74HC86AF —
Quad Exclusive OR Gate



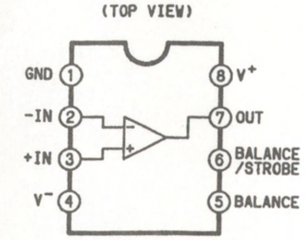
$Y = A \oplus B = \bar{A}B + A\bar{B}$

TRUTH TABLE

INPUTS		OUTPUTS
A	B	Y
L	L	L
L	H	H
H	L	H
H	H	L

— μPC311G2 —
Voltage Comparator

(TOP VIEW)



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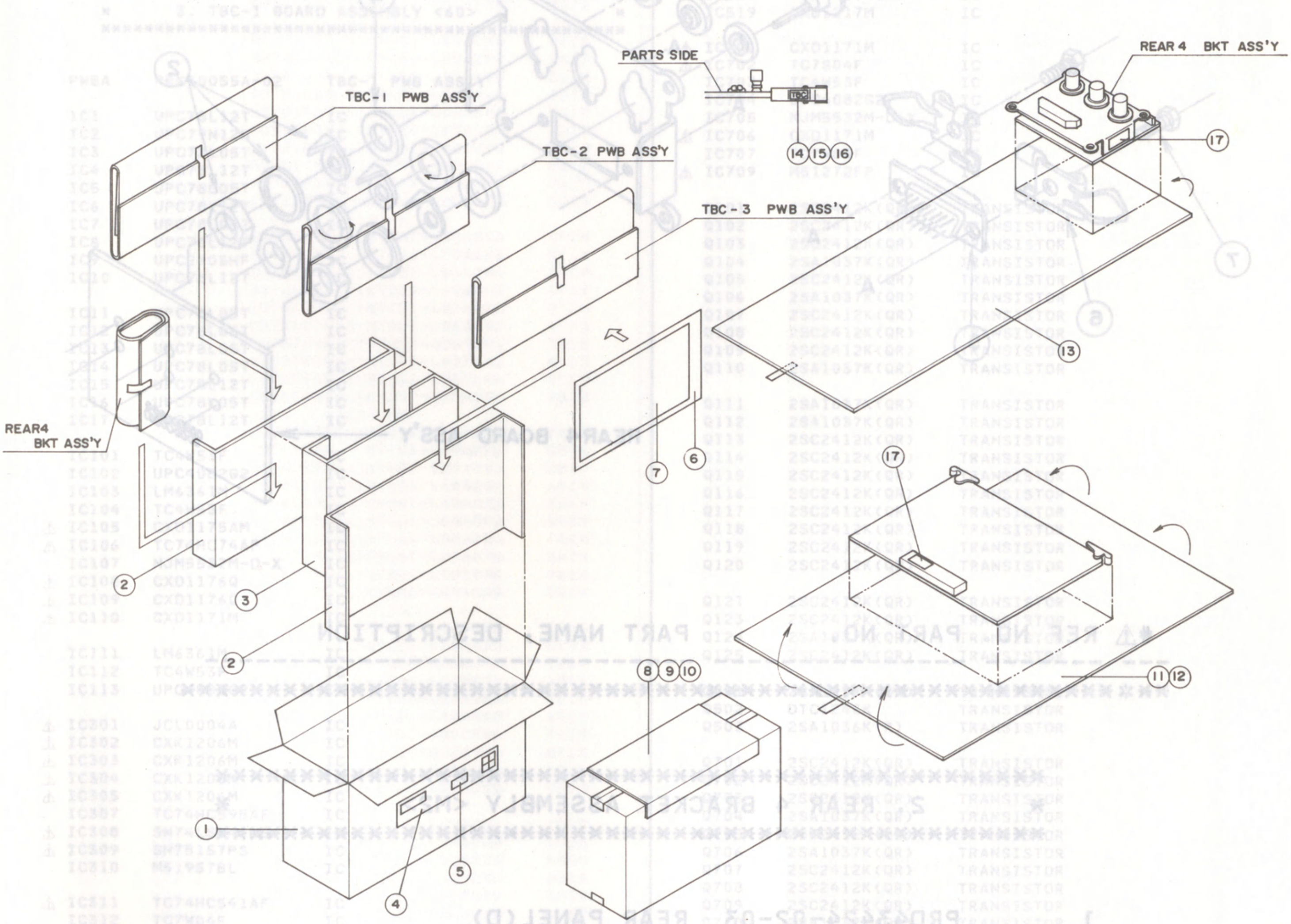
SECTION 4
EXPLODED VIEWS AND PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

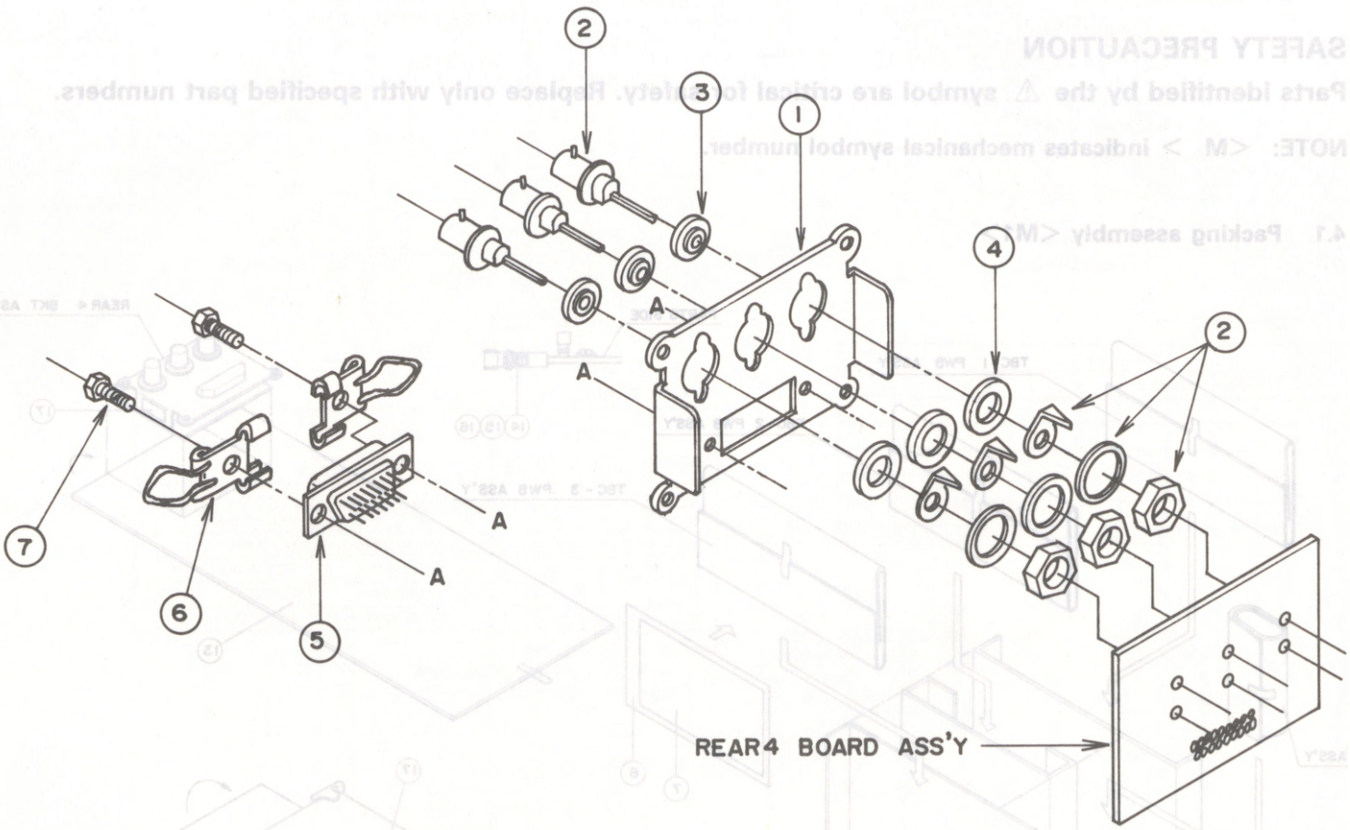
NOTE: <M > indicates mechanical symbol number.

4.1 Packing assembly <M1>



#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
			1. PACKING ASSEMBLY <M1>
	1	PRD43482	PACKING CASE
	2	PRD43594	SPACER,X2
	3	PRD43595	SPACER
	4	PRD30386-07	PACKING LABEL,X2
	5	PU42091	NO.PLATE,X2
	6	QPGA017-02505	POLY BAG
⚠	7	PGD30002-260	INSTRUCTIONS
	8	BT-20109A	WARRANTY CARD
	9	BT-20104A	TOLL FREE CARD
	10	PU54821	POLY BAG
	11	PRD30070-11	AIR CAP,X2
	12	PRD30070-12	AIR CAP
	13	PRD30070-13	AIR CAP
	14	PRD30072-33	STICKER
	15	PRD30072-34	STICKER
	16	PRD30072-35	STICKER
	17	PRD30072-38	STICKER,X2

4.2 Rear 4 bracket assembly <M2>




```
#⚠ REF NO. PART NO.        PART NAME, DESCRIPTION
--- ------- -------------- ----------------------------
***********************************************************

     *************************************************
     *      2. REAR 4 BRACKET ASSEMBLY <M2>          *
     *************************************************


    1       PRD43424-02-03  REAR PANEL(D)
    2       PGZ00440        BNC CONNECTOR
    3       PU48611         RING
    4       Q03093-439      WASHER
    5       PGZ00755        15P CONNECTOR
    6       PGZ00924        SPRING LOCK
    7       PGZ00925        SCREW
```

SECTION 5

ELECTRICAL PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

3. TBC-1 BOARD ASSEMBLY <60>

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	PWBA	PRK10055A-02	TBC-1 PWB ASS'Y
	IC1	UPC78L12T	IC
	IC2	UPC79N12H	IC
	IC3	UPC78L05T	IC
	IC4	UPC78L12T	IC
	IC5	UPC78L05T	IC
	IC6	UPC78L12T	IC
	IC7	UPC78L05T	IC
	IC8	UPC78L12T	IC
	IC9	UPC2405HF	IC
	IC10	UPC78L12T	IC
	IC11	UPC78L05T	IC
	IC12	UPC78L05T	IC
	IC13	UPC78L05T	IC
	IC14	UPC78L05T	IC
	IC15	UPC78L12T	IC
	IC16	UPC78L05T	IC
	IC17	UPC78L12T	IC
	IC101	TC4W53F	IC
	IC102	UPC4082G2	IC
	IC103	LM6361M	IC
	IC104	TC4W53F	IC
⚠	IC105	CXD1175AM	IC
⚠	IC106	TC74HC74AF	IC
	IC107	NJM5532M-D-X	IC
⚠	IC108	CXD1176Q	IC
⚠	IC109	CXD1176Q	IC
⚠	IC110	CXD1171M	IC
	IC111	LM6361M	IC
	IC112	TC4W53F	IC
	IC113	UPC4082G2	IC
⚠	IC301	JCL0004A	IC
⚠	IC302	CXK1206M	IC
⚠	IC303	CXK1206M	IC
⚠	IC304	CXK1206M	IC
⚠	IC305	CXK1206M	IC
	IC307	TC74HC595AF	IC
⚠	IC308	SN74LS541NS	IC
⚠	IC309	SN75157PS	IC
	IC310	M51957BL	IC
⚠	IC311	TC74HC541AF	IC
	IC312	TC7W04F	IC
	IC313	TC7S08F	IC
	IC314	TC4W53F	IC
	IC501	UPC4082G2	IC
	IC502	UPC311G2	IC
	IC503	TC74HC221AF	IC
	IC504	CX23065A	IC
	IC505	TC4053BF	IC
⚠	IC506	TC74HC541AF	IC
	IC507	TC74HC157AF	IC
	IC508	TC7W08F	IC
	IC509	TC7S32F	IC
⚠	IC510	TC74HC163AF	IC
	IC511	TC74HC86AF	IC
	IC512	UPC358G2	IC
	IC513	TC4W53F	IC
⚠	IC514	SN75157PS	IC
	IC515	TC7W04F	IC
⚠	IC516	CXD1217M	IC
	IC517	TC74HC21AF	IC
	IC518	TC74HC541AF	IC
⚠	IC519	CXD1217M	IC
⚠	IC701	CXD1171M	IC
⚠	IC702	TC7S04F	IC
	IC703	TC4W53F	IC
	IC704	UPC4082G2	IC
	IC705	NJM5532M-D-X	IC
⚠	IC706	CXD1171M	IC
	IC707	TC7W08F	IC
⚠	IC709	M51272FP	IC
	Q101	2SC2412K(QR)	TRANSISTOR
	Q102	2SC2412K(QR)	TRANSISTOR
	Q103	2SC2412K(QR)	TRANSISTOR
	Q104	2SA1037K(QR)	TRANSISTOR
	Q105	2SC2412K(QR)	TRANSISTOR
	Q106	2SA1037K(QR)	TRANSISTOR
	Q107	2SC2412K(QR)	TRANSISTOR
	Q108	2SC2412K(QR)	TRANSISTOR
	Q109	2SC2412K(QR)	TRANSISTOR
	Q110	2SA1037K(QR)	TRANSISTOR
	Q111	2SA1037K(QR)	TRANSISTOR
	Q112	2SA1037K(QR)	TRANSISTOR
	Q113	2SC2412K(QR)	TRANSISTOR
	Q114	2SC2412K(QR)	TRANSISTOR
	Q115	2SC2412K(QR)	TRANSISTOR
	Q116	2SC2412K(QR)	TRANSISTOR
	Q117	2SC2412K(QR)	TRANSISTOR
	Q118	2SC2412K(QR)	TRANSISTOR
	Q119	2SC2412K(QR)	TRANSISTOR
	Q120	2SC2412K(QR)	TRANSISTOR
	Q121	2SC2412K(QR)	TRANSISTOR
	Q123	2SC2412K(QR)	TRANSISTOR
	Q124	2SA1037K(QR)	TRANSISTOR
	Q125	2SC2412K(QR)	TRANSISTOR
	Q501	2SA1037K(QR)	TRANSISTOR
	Q502	DTC124EK	TRANSISTOR
	Q503	2SA1036K(R)	TRANSISTOR
	Q701	2SC2412K(QR)	TRANSISTOR
	Q702	2SC2412K(QR)	TRANSISTOR
	Q703	2SC2412K(QR)	TRANSISTOR
	Q704	2SA1037K(QR)	TRANSISTOR
	Q705	2SC2412K(QR)	TRANSISTOR
	Q706	2SA1037K(QR)	TRANSISTOR
	Q707	2SC2412K(QR)	TRANSISTOR
	Q708	2SC2412K(QR)	TRANSISTOR
	Q709	2SC2412K(QR)	TRANSISTOR
	Q710	2SA1037K(QR)	TRANSISTOR
	Q711	2SC2412K(QR)	TRANSISTOR
	Q712	2SA1037K(QR)	TRANSISTOR
	Q713	2SC2412K(QR)	TRANSISTOR
	Q714	2SA1037K(QR)	TRANSISTOR
	Q715	2SC2412K(QR)	TRANSISTOR
	Q716	2SC2412K(QR)	TRANSISTOR
	D101	MA3062(M)	DIODE
	D102	MA3062(M)	DIODE
	D502	DAP202K	DIODE
	D701	DAN202K	DIODE
	D702	DAN202K	DIODE
	D703	MA3039	DIODE
	R1	NVP1415-102N	V RESISTOR
	R2	NVP1415-502N	V RESISTOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	R3	NVP1415-102N	V RESISTOR
	R4	NVP1415-202N	V RESISTOR
	R5	NVP1415-102N	V RESISTOR
	R6	NVP1415-202N	V RESISTOR
	R7	QVPB610-502	V RESISTOR
	R8	NVP1415-502N	V RESISTOR
	R9	NVP1415-202N	V RESISTOR
	R10	NVP1415-103N	V RESISTOR
	R11	QVPB610-103	V RESISTOR
	R12	QVPB610-103	V RESISTOR
	R14	QVPB610-102	V RESISTOR
	R15	QVPB610-103	V RESISTOR
	R16	NVP1415-202N	V RESISTOR
	R17	QVPB610-102	V RESISTOR
	R18	NVP1415-102N	V RESISTOR
	R19	NVP1415-102N	V RESISTOR
	R20	QVPB610-103	V RESISTOR
	R21	QVPB610-103	V RESISTOR
	R101	QRSA08J-333YN	RESISTOR
	R102	QRSA08J-181YN	RESISTOR
	R103	QRSA08J-393YN	RESISTOR
	R104	QRSA08J-182YN	RESISTOR
	R105	QRSA08J-563YN	RESISTOR
	R106	QRSA08J-123YN	RESISTOR
	R107	QRSA08J-331YN	RESISTOR
	R108	QRSA08J-682YN	RESISTOR
	R109	QRSA08J-103YN	RESISTOR
	R110	QRSA08J-102YN	RESISTOR
	R111	QRSA08J-102YN	RESISTOR
	R112	QRSA08J-181YN	RESISTOR
	R113	QRSA08J-682YN	RESISTOR
	R114	QRSA08J-102YN	RESISTOR
	R115	QRSA08J-223YN	RESISTOR
	R116	QRSA08J-103YN	RESISTOR
	R117	QRSA08J-223YN	RESISTOR
	R118	QRSA08J-103YN	RESISTOR
	R119	QRSA08J-392YN	RESISTOR
	R120	QRSA08J-122YN	RESISTOR
	R121	QRSA08J-181YN	RESISTOR
	R122	QRSA08J-181YN	RESISTOR
	R123	QRSA08J-152YN	RESISTOR
	R124	QRSA08J-821YN	RESISTOR
	R125	QRSA08J-181YN	RESISTOR
	R126	QRSA08J-181YN	RESISTOR
	R127	QRSA08J-392YN	RESISTOR
	R128	QRSA08J-122YN	RESISTOR
	R129	QRSA08J-392YN	RESISTOR
	R130	QRSA08J-222YN	RESISTOR
	R131	QRSA08J-101YN	RESISTOR
	R132	QRSA08J-102YN	RESISTOR
	R133	QRSA08J-101YN	RESISTOR
	R134	QRSA08J-101YN	RESISTOR
	R135	QRSA08J-101YN	RESISTOR
	R136	QRSA08J-101YN	RESISTOR
	R137	QRSA08J-101YN	RESISTOR
	R138	QRSA08J-101YN	RESISTOR
	R139	QRSA08J-101YN	RESISTOR
	R140	QRSA08J-101YN	RESISTOR
	R141	QRSA08J-101YN	RESISTOR
	R142	QRSA08J-101YN	RESISTOR
	R143	QRSA08J-333YN	RESISTOR
	R144	QRSA08J-393YN	RESISTOR
	R145	QRSA08J-182YN	RESISTOR
	R146	QRSA08J-333YN	RESISTOR
	R147	QRSA08J-333YN	RESISTOR
	R148	QRSA08J-181YN	RESISTOR
	R149	QRSA08J-102YN	RESISTOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	R150	QRSA08J-181YN	RESISTOR
	R151	QRSA08J-152YN	RESISTOR
	R152	QRSA08J-101YN	RESISTOR
	R153	QRSA08J-101YN	RESISTOR
	R154	QRSA08J-101YN	RESISTOR
	R155	QRSA08J-101YN	RESISTOR
	R156	QRSA08J-101YN	RESISTOR
	R157	QRSA08J-101YN	RESISTOR
	R158	QRSA08J-101YN	RESISTOR
	R159	QRSA08J-101YN	RESISTOR
	R160	QRSA08J-101YN	RESISTOR
	R161	QRSA08J-101YN	RESISTOR
	R162	QRSA08J-333YN	RESISTOR
	R163	QRSA08J-393YN	RESISTOR
	R164	QRSA08J-182YN	RESISTOR
	R165	QRSA08J-333YN	RESISTOR
	R166	QRSA08J-333YN	RESISTOR
	R167	QRSA08J-181YN	RESISTOR
	R168	QRSA08J-102YN	RESISTOR
	R169	QRSA08J-181YN	RESISTOR
	R170	QRSA08J-821YN	RESISTOR
	R171	QRSA08J-101YN	RESISTOR
	R172	QRSA08J-101YN	RESISTOR
	R173	QRSA08J-101YN	RESISTOR
	R174	QRSA08J-101YN	RESISTOR
	R175	QRSA08J-101YN	RESISTOR
	R176	QRSA08J-101YN	RESISTOR
	R177	QRSA08J-101YN	RESISTOR
	R178	QRSA08J-101YN	RESISTOR
	R179	QRSA08J-101YN	RESISTOR
	R180	QRSA08J-101YN	RESISTOR
	R181	QRSA08J-101YN	RESISTOR
	R182	QRSA08J-101YN	RESISTOR
	R183	QRSA08J-101YN	RESISTOR
	R184	QRSA08J-101YN	RESISTOR
	R185	QRSA08J-101YN	RESISTOR
	R186	QRSA08J-101YN	RESISTOR
	R187	QRSA08J-101YN	RESISTOR
	R188	QRSA08J-101YN	RESISTOR
	R189	QRSA08J-101YN	RESISTOR
	R190	QRSA08J-332YN	RESISTOR
	R191	QRSA08J-472YN	RESISTOR
	R192	QRSA08J-103YN	RESISTOR
	R193	QRSA08J-332YN	RESISTOR
	R194	QRSA08J-181YN	RESISTOR
	R195	QRSA08J-332YN	RESISTOR
	R196	QRSA08J-181YN	RESISTOR
	R197	QRSA08J-152YN	RESISTOR
	R198	NRVA62D-201N	RESISTOR
	R199	QRSA08J-181YN	RESISTOR
	R200	QRSA08J-562YN	RESISTOR
	R201	QRSA08J-561YN	RESISTOR
	R202	QRSA08J-562YN	RESISTOR
	R203	QRSA08J-181YN	RESISTOR
	R204	QRSA08J-681YN	RESISTOR
	R205	QRSA08J-563YN	RESISTOR
	R206	QRSA08J-333YN	RESISTOR
	R207	QRSA08J-152YN	RESISTOR
	R208	QRSA08J-391YN	RESISTOR
	R209	QRSA08J-391YN	RESISTOR
	R210	QRSA08J-152YN	RESISTOR
	R211	QRSA08J-333YN	RESISTOR
	R212	QRSA08J-563YN	RESISTOR
	R213	QRSA08J-181YN	RESISTOR
	R214	QRSA08J-272YN	RESISTOR
	R215	QRSA08J-333YN	RESISTOR
	R216	QRSA08J-473YN	RESISTOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	R217	QRSA08J-272YN	RESISTOR
	R218	QRSA08J-391YN	RESISTOR
	R219	QRSA08J-332YN	RESISTOR
	R220	QRSA08J-391YN	RESISTOR
	R221	QRSA08J-181YN	RESISTOR
	R222	QRSA08J-181YN	RESISTOR
	R223	QRSA08J-391YN	RESISTOR
	R224	QRSA08J-102YN	RESISTOR
	R225	QRSA08J-391YN	RESISTOR
	R226	QRSA08J-181YN	RESISTOR
	R227	QRSA08J-122YN	RESISTOR
	R228	QRSA08J-331YN	RESISTOR
	R229	QRSA08J-181YN	RESISTOR
	R230	QRSA08J-102YN	RESISTOR
	R231	QRSA08J-101YN	RESISTOR
	R232	QRSA08J-181YN	RESISTOR
	R234	QRSA08J-821YN	RESISTOR
	R235	QRSA08J-181YN	RESISTOR
	R236	QRSA08J-182YN	RESISTOR
	R237	QRD167J-0R0	RESISTOR
	R238	QRSA08J-102YN	RESISTOR
	R239	QRSA08J-101YN	RESISTOR
	R240	QRSA08J-473YN	RESISTOR
	R241	QRSA08J-123YN	RESISTOR
	R242	QRSA08J-392YN	RESISTOR
	R243	QRSA08J-123YN	RESISTOR
	R244	QRSA08J-562YN	RESISTOR
	R245	QRSA08J-223YN	RESISTOR
	R246	QRSA08J-472YN	RESISTOR
	R247	QRSA08J-122YN	RESISTOR
	R248	QRSA08J-101YN	RESISTOR
	R249	QRSA08J-122YN	RESISTOR
	R250	QRSA08J-103YN	RESISTOR
	R301	QRSA08J-101YN	RESISTOR
	R302	QRSA08J-101YN	RESISTOR
	R303	QRSA08J-101YN	RESISTOR
	R304	QRSA08J-101YN	RESISTOR
	R305	QRSA08J-101YN	RESISTOR
	R307	QRSA08J-821YN	RESISTOR
	R308	QRSA08J-101YN	RESISTOR
	R309	QRSA08J-101YN	RESISTOR
	R310	QRSA08J-101YN	RESISTOR
	R311	QRSA08J-101YN	RESISTOR
	R312	QRSA08J-101YN	RESISTOR
	R313	QRSA08J-101YN	RESISTOR
	R314	QRSA08J-101YN	RESISTOR
	R315	QRSA08J-101YN	RESISTOR
	R316	QRSA08J-101YN	RESISTOR
	R317	QRSA08J-473YN	RESISTOR
	R318	QRSA08J-473YN	RESISTOR
	R319	QRSA08J-473YN	RESISTOR
	R320	QRSA08J-473YN	RESISTOR
	R321	QRSA08J-473YN	RESISTOR
	R322	QRSA08J-101YN	RESISTOR
	R323	QRSA08J-101YN	RESISTOR
	R324	QRSA08J-101YN	RESISTOR
	R325	QRSA08J-101YN	RESISTOR
	R326	QRSA08J-101YN	RESISTOR
	R327	QRSA08J-101YN	RESISTOR
	R328	QRSA08J-101YN	RESISTOR
	R329	QRSA08J-101YN	RESISTOR
	R330	QRSA08J-101YN	RESISTOR
	R331	QRSA08J-101YN	RESISTOR
	R332	QRSA08J-101YN	RESISTOR
	R333	QRSA08J-101YN	RESISTOR
	R334	QRSA08J-101YN	RESISTOR
	R335	QRSA08J-101YN	RESISTOR
	R336	QRSA08J-222YN	RESISTOR
	R337	QRSA08J-222YN	RESISTOR
	R338	QRSA08J-101YN	RESISTOR
	R339	QRSA08J-101YN	RESISTOR
	R340	QRSA08J-272YN	RESISTOR
	R341	QRSA08J-562YN	RESISTOR
	R342	QRSA08J-103YN	RESISTOR
	R345	QRSA08J-473YN	RESISTOR
	R346	QRSA08J-101YN	RESISTOR
	R347	QRSA08J-0R0Y	RESISTOR
	R348	QRSA08J-101YN	RESISTOR
	R349	QRSA08J-101YN	RESISTOR
	R350	QRSA08J-101YN	RESISTOR
	R351	QRSA08J-101YN	RESISTOR
	R352	QRSA08J-101YN	RESISTOR
	R353	QRSA08J-101YN	RESISTOR
	R354	QRSA08J-101YN	RESISTOR
	R355	QRSA08J-101YN	RESISTOR
	R356	QRSA08J-101YN	RESISTOR
	R357	QRSA08J-101YN	RESISTOR
	R358	QRSA08J-101YN	RESISTOR
	R359	QRSA08J-473YN	RESISTOR
	R360	QRSA08J-101YN	RESISTOR
	R361	QRSA08J-101YN	RESISTOR
	R362	QRSA08J-473YN	RESISTOR
	R363	QRSA08J-102YN	RESISTOR
	R364	QRSA08J-102YN	RESISTOR
	R365	QRSA08J-102YN	RESISTOR
	R366	QRSA08J-101YN	RESISTOR
	R367	QRSA08J-101YN	RESISTOR
	R368	QRSA08J-101YN	RESISTOR
	R369	QRSA08J-101YN	RESISTOR
	R370	QRSA08J-101YN	RESISTOR
	R371	QRSA08J-101YN	RESISTOR
	R372	QRSA08J-101YN	RESISTOR
	R373	QRSA08J-101YN	RESISTOR
	R374	QRSA08J-101YN	RESISTOR
	R375	QRSA08J-101YN	RESISTOR
	R376	QRSA08J-101YN	RESISTOR
	R377	QRSA08J-101YN	RESISTOR
	R378	QRSA08J-101YN	RESISTOR
	R379	QRSA08J-101YN	RESISTOR
	R380	QRSA08J-101YN	RESISTOR
	R381	QRSA08J-101YN	RESISTOR
	R382	QRSA08J-101YN	RESISTOR
	R383	QRSA08J-101YN	RESISTOR
	R384	QRSA08J-101YN	RESISTOR
	R385	QRSA08J-101YN	RESISTOR
	R386	QRSA08J-101YN	RESISTOR
	R387	QRSA08J-101YN	RESISTOR
	R388	QRSA08J-101YN	RESISTOR
	R389	QRSA08J-101YN	RESISTOR
	R390	QRSA08J-101YN	RESISTOR
	R391	QRSA08J-101YN	RESISTOR
	R392	QRSA08J-101YN	RESISTOR
	R393	QRSA08J-101YN	RESISTOR
	R394	QRSA08J-101YN	RESISTOR
	R395	QRSA08J-101YN	RESISTOR
	R396	QRSA08J-101YN	RESISTOR
	R397	QRSA08J-101YN	RESISTOR
	R398	QRSA08J-101YN	RESISTOR
	R399	QRSA08J-101YN	RESISTOR
	R400	QRSA08J-101YN	RESISTOR
	R401	QRSA08J-101YN	RESISTOR
	R402	QRSA08J-101YN	RESISTOR
	R403	QRSA08J-101YN	RESISTOR
	R404	QRSA08J-101YN	RESISTOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	R405	QRSA08J-101YN	RESISTOR
	R406	QRSA08J-101YN	RESISTOR
	R407	QRSA08J-101YN	RESISTOR
	R408	QRSA08J-101YN	RESISTOR
	R409	QRSA08J-101YN	RESISTOR
	R410	QRSA08J-101YN	RESISTOR
	R411	QRSA08J-101YN	RESISTOR
	R412	QRSA08J-101YN	RESISTOR
	R413	QRSA08J-101YN	RESISTOR
	R414	QRSA08J-102YN	RESISTOR
	R415	QRSA08J-473YN	RESISTOR
⚠	R416	QRD161J-101	RESISTOR
	R501	QRSA08J-473YN	RESISTOR
	R502	QRSA08J-473YN	RESISTOR
	R503	QRSA08J-680YN	RESISTOR
	R504	QRSA08J-103YN	RESISTOR
	R505	QRSA08J-181YN	RESISTOR
	R506	QRSA08J-560YN	RESISTOR
	R507	QRSA08J-102YN	RESISTOR
	R508	QRSA08J-681YN	RESISTOR
	R509	QRSA08J-473YN	RESISTOR
	R510	QRSA08J-101YN	RESISTOR
	R511	QRSA08J-473YN	RESISTOR
	R512	QRSA08J-102YN	RESISTOR
	R513	QRSA08J-223YN	RESISTOR
	R514	QRSA08J-102YN	RESISTOR
	R515	QRSA08J-153YN	RESISTOR
	R516	QRSA08J-103YN	RESISTOR
	R517	QRSA08J-472YN	RESISTOR
	R518	QRSA08J-104YN	RESISTOR
	R519	QRSA08J-101YN	RESISTOR
	R520	QRSA08J-101YN	RESISTOR
	R521	QRSA08J-222YN	RESISTOR
	R522	QRSA08J-222YN	RESISTOR
	R523	QRSA08J-391YN	RESISTOR
	R524	QRSA08J-222YN	RESISTOR
	R526	QRSA08J-222YN	RESISTOR
	R527	QRSA08J-101YN	RESISTOR
	R528	QRSA08J-332YN	RESISTOR
	R529	QRSA08J-102YN	RESISTOR
	R530	QRSA08J-102YN	RESISTOR
	R531	QRSA08J-152YN	RESISTOR
	R532	QRSA08J-822YN	RESISTOR
	R533	QRSA08J-392YN	RESISTOR
	R534	QRSA08J-222YN	RESISTOR
	R535	QRSA08J-101YN	RESISTOR
	R536	QRSA08J-101YN	RESISTOR
	R537	QRSA08J-101YN	RESISTOR
	R538	QRSA08J-101YN	RESISTOR
	R539	QRSA08J-105YN	RESISTOR
	R540	QRSA08J-222YN	RESISTOR
	R541	QRSA08J-105YN	RESISTOR
	R542	QRSA08J-101YN	RESISTOR
	R543	QRSA08J-222YN	RESISTOR
	R544	QRSA08J-101YN	RESISTOR
	R545	QRSA08J-105YN	RESISTOR
	R546	QRSA08J-102YN	RESISTOR
	R547	QRSA08J-101YN	RESISTOR
	R548	QRSA08J-101YN	RESISTOR
	R549	QRSA08J-101YN	RESISTOR
	R550	QRSA08J-101YN	RESISTOR
	R551	QRSA08J-333YN	RESISTOR
	R552	QRSA08J-222YN	RESISTOR
	R553	QRSA08J-101YN	RESISTOR
⚠	R554	QRD161J-0R0	RESISTOR
	R701	QRSA08J-101YN	RESISTOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	R702	QRSA08J-101YN	RESISTOR
	R703	QRSA08J-101YN	RESISTOR
	R704	QRSA08J-101YN	RESISTOR
	R705	QRSA08J-101YN	RESISTOR
	R706	QRSA08J-101YN	RESISTOR
	R707	QRSA08J-101YN	RESISTOR
	R708	QRSA08J-101YN	RESISTOR
	R709	QRSA08J-332YN	RESISTOR
	R710	NRVA62D-201N	RESISTOR
	R711	QRSA08J-563YN	RESISTOR
	R712	QRSA08J-333YN	RESISTOR
	R713	QRSA08J-152YN	RESISTOR
	R714	QRSA08J-391YN	RESISTOR
	R715	QRSA08J-391YN	RESISTOR
	R716	QRSA08J-122YN	RESISTOR
	R717	QRSA08J-152YN	RESISTOR
	R718	QRSA08J-563YN	RESISTOR
	R719	QRSA08J-333YN	RESISTOR
	R720	QRSA08J-181YN	RESISTOR
	R721	QRSA08J-821YN	RESISTOR
	R722	QRSA08J-333YN	RESISTOR
	R723	QRSA08J-333YN	RESISTOR
	R724	QRSA08J-181YN	RESISTOR
	R725	QRSA08J-181YN	RESISTOR
	R726	QRSA08J-181YN	RESISTOR
	R727	QRSA08J-122YN	RESISTOR
	R728	QRSA08J-102YN	RESISTOR
	R729	QRSA08J-181YN	RESISTOR
	R730	NRVA62D-331N	RESISTOR
	R731	QRSA08J-101YN	RESISTOR
	R732	QRSA08J-101YN	RESISTOR
	R733	QRSA08J-473YN	RESISTOR
	R734	QRSA08J-102YN	RESISTOR
	R735	QRSA08J-102YN	RESISTOR
	R736	QRSA08J-123YN	RESISTOR
	R737	QRSA08J-392YN	RESISTOR
	R738	QRSA08J-123YN	RESISTOR
	R739	QRSA08J-223YN	RESISTOR
	R740	QRSA08J-562YN	RESISTOR
	R741	QRSA08J-472YN	RESISTOR
	R742	QRSA08J-472YN	RESISTOR
	R743	QRSA08J-103YN	RESISTOR
	R744	QRSA08J-392YN	RESISTOR
	R745	QRSA08J-822YN	RESISTOR
	R746	QRSA08J-472YN	RESISTOR
	R747	QRSA08J-472YN	RESISTOR
	R748	QRSA08J-332YN	RESISTOR
	R749	QRSA08J-102YN	RESISTOR
	R750	QRSA08J-102YN	RESISTOR
	R751	QRSA08J-101YN	RESISTOR
	R752	QRSA08J-101YN	RESISTOR
	R753	QRSA08J-101YN	RESISTOR
	R754	QRSA08J-101YN	RESISTOR
	R755	QRSA08J-101YN	RESISTOR
	R756	QRSA08J-101YN	RESISTOR
	R757	QRSA08J-101YN	RESISTOR
	R758	QRSA08J-101YN	RESISTOR
	R759	QRSA08J-332YN	RESISTOR
	R760	NRVA62D-201N	RESISTOR
	R761	QRSA08J-563YN	RESISTOR
	R762	QRSA08J-333YN	RESISTOR
	R763	QRSA08J-152YN	RESISTOR
	R764	QRSA08J-391YN	RESISTOR
	R765	QRSA08J-391YN	RESISTOR
	R766	QRSA08J-122YN	RESISTOR
	R767	QRSA08J-152YN	RESISTOR
	R768	QRSA08J-563YN	RESISTOR
	R769	QRSA08J-333YN	RESISTOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	R770	QRSA08J-181YN	RESISTOR
	R771	QRSA08J-821YN	RESISTOR
	R772	QRSA08J-333YN	RESISTOR
	R773	QRSA08J-333YN	RESISTOR
	R774	QRSA08J-181YN	RESISTOR
	R775	QRSA08J-181YN	RESISTOR
	R776	QRSA08J-181YN	RESISTOR
	R777	QRSA08J-122YN	RESISTOR
	R778	QRSA08J-102YN	RESISTOR
	R779	QRSA08J-181YN	RESISTOR
	R780	NRVA62D-331N	RESISTOR
	R781	QRSA08J-331YN	RESISTOR
	R782	QRSA08J-331YN	RESISTOR
	R783	QRSA08J-102YN	RESISTOR
	R784	QRSA08J-102YN	RESISTOR
	R785	QRSA08J-103YN	RESISTOR
	R786	QRSA08J-153YN	RESISTOR
	R787	QRSA08J-223YN	RESISTOR
	R788	NRVA62D-222N	RESISTOR
	R789	NRVA62D-471N	RESISTOR
	R790	QRSA08J-153YN	RESISTOR
	R791	QRSA08J-223YN	RESISTOR
	R792	NRVA62D-471N	RESISTOR
	R793	NRVA62D-222N	RESISTOR
	R794	QRD161J-102	RESISTOR
	R795	NRVA62D-102N	RESISTOR
	R796	QRSA08J-473YN	RESISTOR
	R797	QRSA08J-153YN	RESISTOR
	R798	QRD161J-222	RESISTOR
	R799	NRVA62D-102N	RESISTOR
	R800	NRVA62D-102N	RESISTOR
	R801	QRSA08J-101YN	RESISTOR
	R802	QRSA08J-0R0Y	RESISTOR
	R803	QRSA08J-821YN	RESISTOR
	R804	QRSA08J-181YN	RESISTOR
	R805	QRSA08J-821YN	RESISTOR
	R806	QRSA08J-821YN	RESISTOR
	R807	QRSA08J-333YN	RESISTOR
	R808	QRSA08J-102YN	RESISTOR
	RA301	EXB-P88103M	NETWORK RESISTOR
	RA302	EXB-P88103M	NETWORK RESISTOR
	C101	QETC1EM-107	E CAPACITOR
	C102	QETC1CM-107	E CAPACITOR
	C103	QCFA1EZ-104	CAPACITOR
	C104	QCFA1HZ-103	CAPACITOR
	C105	QETC1CM-107	E CAPACITOR
	C106	QETC1CM-476	E CAPACITOR
	C107	QETC1AM-476	E CAPACITOR
	C108	QCFA1EZ-104	CAPACITOR
	C109	NEH11CM-106N	E CAPACITOR
	C110	QCFA1EZ-104	CAPACITOR
	C111	QCFA1EZ-104	CAPACITOR
	C112	QCFA1EZ-104	CAPACITOR
	C113	NFV21CJ-223AY	PP CAPACITOR
	C114	NFV31CJ-104AY	M CAPACITOR
	C115	QCFA1EZ-104	CAPACITOR
	C116	QCFA1EZ-104	CAPACITOR
	C117	QCFA1EZ-104	CAPACITOR
	C118	QCTA1CH-150	CAPACITOR
	C119	QCTA1CH-2R0	CAPACITOR
	C120	QCFA1EZ-104	CAPACITOR
	C121	QETC1AM-107	E CAPACITOR
	C122	QCFA1EZ-104	CAPACITOR
	C123	QCFA1EZ-104	CAPACITOR
	C124	QCFA1EZ-104	CAPACITOR
	C125	QCFA1HZ-103	CAPACITOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	C126	QETC1AM-107	E CAPACITOR
	C127	QCFA1EZ-104	CAPACITOR
	C128	QEF81AM-475	TANTAL CAPACITOR
	C129	QCFA1HZ-103	CAPACITOR
	C130	QCFA1HZ-103	CAPACITOR
	C131	QCFA1HZ-103	CAPACITOR
	C132	QETC1AM-107	E CAPACITOR
	C133	QCFA1HZ-103	CAPACITOR
	C134	QCFA1HZ-103	CAPACITOR
	C135	QCFA1EZ-104	CAPACITOR
	C136	QCFA1HZ-103	CAPACITOR
	C137	QETC1CM-476	E CAPACITOR
	C138	QCFA1EZ-104	CAPACITOR
	C139	QCFA1HZ-103	CAPACITOR
	C140	QETC1CM-107	E CAPACITOR
	C141	QETC1CM-476	E CAPACITOR
	C142	QETC1AM-476	E CAPACITOR
	C143	QETC1CM-476	E CAPACITOR
	C144	QCFA1EZ-104	CAPACITOR
	C145	QCTA1CH-330	CAPACITOR
	C146	QCFA1EZ-104	CAPACITOR
	C147	QCFA1HZ-103	CAPACITOR
	C148	QETC1AM-107	E CAPACITOR
	C149	QEF81AM-475	TANTAL CAPACITOR
	C150	QCFA1EZ-104	CAPACITOR
	C151	NEH11CM-106N	E CAPACITOR
	C152	QCFA1HZ-103	CAPACITOR
	C153	QCFA1HZ-103	CAPACITOR
	C154	NFV21CJ-103AY	PP CAPACITOR
	C155	QCFA1HZ-103	CAPACITOR
	C156	QEF81AM-475	TANTAL CAPACITOR
	C157	QCFA1HZ-103	CAPACITOR
	C158	QETC1CM-476	E CAPACITOR
	C159	QETC1AM-476	E CAPACITOR
	C160	QETC1CM-476	E CAPACITOR
	C161	QCTA1CH-330	CAPACITOR
	C162	NEH11CM-106N	E CAPACITOR
	C163	QEF81AM-475	TANTAL CAPACITOR
	C164	QCFA1HZ-103	CAPACITOR
	C165	QCFA1HZ-103	CAPACITOR
	C166	QCFA1HZ-103	CAPACITOR
	C167	NFV21CJ-103AY	PP CAPACITOR
	C168	QCFA1HZ-103	CAPACITOR
	C169	QCFA1HZ-103	CAPACITOR
	C170	QEF81AM-475	TANTAL CAPACITOR
	C171	QEF81AM-475	TANTAL CAPACITOR
	C172	QEF81AM-475	TANTAL CAPACITOR
	C173	QCFA1HZ-103	CAPACITOR
	C174	QCFA1EZ-104	CAPACITOR
	C175	QCFA1HZ-103	CAPACITOR
	C176	QETC1AM-107	E CAPACITOR
	C177	QCFA1EZ-104	CAPACITOR
	C178	QEF81AM-475	TANTAL CAPACITOR
	C179	QCFA1HZ-103	CAPACITOR
	C180	QCFA1HZ-103	CAPACITOR
	C181	QCTA1CH-101	CAPACITOR
	C182	QEF81CM-475	TANTAL CAPACITOR
	C183	QCFA1EZ-104	CAPACITOR
	C184	QCFA1HZ-103	CAPACITOR
	C185	QETC1CM-107	E CAPACITOR
	C186	QETC0JM-107	E CAPACITOR
	C187	QETC1AM-107	E CAPACITOR
	C188	QETC1CM-476	E CAPACITOR
	C189	QETC1AM-107	E CAPACITOR
	C190	QCFA1EZ-104	CAPACITOR
	C191	QCFA1EZ-104	CAPACITOR
	C192	QETC1AM-107	E CAPACITOR

# ⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	C193	QCSA1HJ-681	CAPACITOR
	C194	QETC1AM-107	E CAPACITOR
	C195	QCFA1EZ-104	CAPACITOR
	C196	QETC1AM-107	E CAPACITOR
	C197	NEH11CM-106N	E CAPACITOR
	C198	QCFA1EZ-104	CAPACITOR
	C199	QCFA1EZ-104	CAPACITOR
	C200	QCFA1EZ-104	CAPACITOR
	C201	QCFA1EZ-104	CAPACITOR
	C202	QCFA1EZ-104	CAPACITOR
	C203	QCFA1EZ-104	CAPACITOR
	C204	QCFA1EZ-104	CAPACITOR
	C205	QCFA1EZ-104	CAPACITOR
	C206	QCFA1HZ-103	CAPACITOR
	C207	NEH11CM-106N	E CAPACITOR
	C208	QCS11HJ-221	CAPACITOR
	C209	QCS11HJ-221	CAPACITOR
	C211	QCS11HJ-101	CAPACITOR
	C301	QCFA1EZ-104	CAPACITOR
	C302	QCFA1HZ-103	CAPACITOR
	C303	QETC1AM-107	E CAPACITOR
	C304	QEF81AM-475	TANTAL CAPACITOR
	C305	QCFA1HZ-103	CAPACITOR
	C306	QCFA1HZ-103	CAPACITOR
	C307	QCFA1HZ-103	CAPACITOR
	C308	QCFA1HZ-103	CAPACITOR
	C309	QCFA1HZ-103	CAPACITOR
	C310	QCFA1HZ-103	CAPACITOR
	C311	QCFA1HZ-103	CAPACITOR
	C312	QCFA1HZ-103	CAPACITOR
	C313	QCSA1HJ-100	CAPACITOR
	C314	QCFA1HZ-103	CAPACITOR
	C315	QCFA1HZ-103	CAPACITOR
	C316	QEF81AM-475	TANTAL CAPACITOR
	C317	QCFA1HZ-103	CAPACITOR
	C318	QCFA1HZ-103	CAPACITOR
	C319	QEF81AM-475	TANTAL CAPACITOR
	C320	QCFA1HZ-103	CAPACITOR
	C321	QCFA1HZ-103	CAPACITOR
	C322	QCFA1HZ-103	CAPACITOR
	C323	QCFA1HZ-103	CAPACITOR
	C324	QCTA1CH-221	CAPACITOR
	C325	QCS11HJ-270	CAPACITOR
⚠	C326	QCS11HJ-560	CAPACITOR
	C501	QCFA1EZ-104	CAPACITOR
	C502	QCFA1HZ-103	CAPACITOR
	C503	QETC1CM-107	E CAPACITOR
	C504	QCSA1HJ-3R0	CAPACITOR
	C505	QCFA1EZ-104	CAPACITOR
	C506	NFV31CJ-102AY	M CAPACITOR
	C507	NEH11CM-106N	E CAPACITOR
	C508	QCFA1HZ-103	CAPACITOR
	C509	QCFA1EZ-104	CAPACITOR
	C510	QCFA1HZ-103	CAPACITOR
	C511	QETC1AM-107	E CAPACITOR
	C512	NFV31CJ-102AY	M CAPACITOR
	C513	NFV31CJ-102AY	M CAPACITOR
	C514	QCFA1HZ-103	CAPACITOR
	C515	NFV31CJ-104AY	M CAPACITOR
	C516	QEN60JM-476	NP E CAPACITOR
	C517	QCTA1CH-391	CAPACITOR
	C518	QCFA1EZ-104	CAPACITOR
	C519	QCFA1HZ-103	CAPACITOR
	C520	QCFA1HZ-103	CAPACITOR
	C521	QCFA1HZ-103	CAPACITOR
	C522	QCFA1HZ-103	CAPACITOR
	C523	QCFA1HZ-103	CAPACITOR
	C524	QCFA1HZ-103	CAPACITOR

# ⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	C525	QCFA1EZ-104	CAPACITOR
	C526	QCFA1HZ-103	CAPACITOR
	C527	QETC1AM-107	E CAPACITOR
	C528	QCFA1HZ-103	CAPACITOR
	C529	QCFA1HZ-103	CAPACITOR
	C530	QEF81AM-105	TANTAL CAPACITOR
	C531	QCFA1EZ-104	CAPACITOR
	C532	NFV31CJ-104AY	M CAPACITOR
	C533	QCFA1EZ-104	CAPACITOR
	C534	QCFA1HZ-103	CAPACITOR
	C535	QCFA1HZ-103	CAPACITOR
	C536	QEF81AM-475	TANTAL CAPACITOR
	C537	QCFA1HZ-103	CAPACITOR
	C538	QCFA1EZ-104	CAPACITOR
	C539	QCFA1HZ-103	CAPACITOR
	C540	QETA1AM-107	E CAPACITOR
	C541	QCFA1HZ-103	CAPACITOR
	C542	QCFA1HZ-103	CAPACITOR
	C543	QCFA1HZ-103	CAPACITOR
	C544	QEF81AM-105	TANTAL CAPACITOR
	C545	NEH11CM-106N	E CAPACITOR
	C546	QCFA1HZ-103	CAPACITOR
	C547	QCFA1HZ-103	CAPACITOR
	C548	QCFA1HZ-103	CAPACITOR
	C549	QCFA1HZ-103	CAPACITOR
	C550	QCFA1HZ-103	CAPACITOR
	C551	QCFA1HZ-103	CAPACITOR
⚠	C552	QCS11HJ-101	CAPACITOR
⚠	C553	QCS11HJ-101	CAPACITOR
⚠	C554	QCS11HJ-101	CAPACITOR
	C701	QCYA1EK-104	CAPACITOR
	C702	QCFA1HZ-103	CAPACITOR
	C703	QCYA1EK-104	CAPACITOR
	C704	QETC1AM-107	E CAPACITOR
	C705	QCFA1HZ-103	CAPACITOR
	C706	QCFA1EZ-104	CAPACITOR
	C707	QETC1AM-107	E CAPACITOR
	C708	QCFA1HZ-103	CAPACITOR
	C709	QCFA1EZ-104	CAPACITOR
	C710	QETC1AM-107	E CAPACITOR
	C711	QETC1CM-476	E CAPACITOR
	C712	QETC1AM-107	E CAPACITOR
	C713	QETC1AM-107	E CAPACITOR
	C714	QCFA1HZ-103	CAPACITOR
	C715	QCFA1HZ-103	CAPACITOR
	C716	QCFA1EZ-104	CAPACITOR
	C717	QCFA1EZ-104	CAPACITOR
	C718	QCFA1HZ-103	CAPACITOR
	C719	QCFA1HZ-103	CAPACITOR
	C720	QETC1AM-107	E CAPACITOR
	C721	QCFA1EZ-104	CAPACITOR
	C722	QEF81AM-475	TANTAL CAPACITOR
	C723	QEF81AM-475	TANTAL CAPACITOR
	C724	QCTA1CH-120	CAPACITOR
	C725	QETC1AM-107	E CAPACITOR
	C726	QCFA1EZ-104	CAPACITOR
	C727	QETC1AM-107	E CAPACITOR
	C728	QCTA1CH-101	CAPACITOR
	C729	QETC1AM-107	E CAPACITOR
	C730	QCFA1HZ-103	CAPACITOR
	C731	QCFA1EZ-104	CAPACITOR
	C732	QCYA1EK-104	CAPACITOR
	C733	QCFA1HZ-103	CAPACITOR
	C734	QCYA1EK-104	CAPACITOR
	C735	QETC1AM-107	E CAPACITOR
	C736	QCFA1HZ-103	CAPACITOR
	C737	QCFA1EZ-104	CAPACITOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	C738	QETC1AM-107	E CAPACITOR
	C739	QCFA1HZ-103	CAPACITOR
	C740	QCFA1EZ-104	CAPACITOR
	C741	QETC1AM-107	E CAPACITOR
	C742	QETC1CM-476	E CAPACITOR
	C743	QETC1AM-107	E CAPACITOR
	C744	QETC1AM-107	E CAPACITOR
	C745	QETC1CM-107	E CAPACITOR
	C746	QCFA1HZ-103	CAPACITOR
	C747	QCFA1EZ-104	CAPACITOR
	C748	QCSA1HJ-271	CAPACITOR
	C749	QCSA1HJ-820	CAPACITOR
	C750	QCSA1HJ-180	CAPACITOR
	C751	QCSA1HJ-101	CAPACITOR
	C752	QCFA1HZ-103	CAPACITOR
	C753	QETC1AM-107	E CAPACITOR
	C754	QCFA1HZ-103	CAPACITOR
	C755	QCFA1EZ-104	CAPACITOR
	C756	QCFA1HZ-103	CAPACITOR
	C757	QEN61AM-476	NP E CAPACITOR
	C758	QFV71HJ-474	TF CAPACITOR
	C759	NEH11CM-106N	E CAPACITOR
	C760	QCFA1EZ-104	CAPACITOR
	C762	QCFA1HZ-103	CAPACITOR
	C763	QEN61AM-476	NP E CAPACITOR
	C764	QFV71HJ-474	TF CAPACITOR
	C765	NEH11CM-106N	E CAPACITOR
	C766	QCFA1EZ-104	CAPACITOR
	C767	QCFA1HZ-103	CAPACITOR
	C768	QETC1AM-476	E CAPACITOR
	C769	QCFA1EZ-104	CAPACITOR
	C770	QCFA1EZ-104	CAPACITOR
	C771	QCFA1EZ-104	CAPACITOR
	C772	QCFA1EZ-104	CAPACITOR
	C773	QETC1CM-107	E CAPACITOR
	C774	QCFA1HZ-103	CAPACITOR
	C775	QCFA1EZ-104	CAPACITOR
	C776	QCFA1EZ-104	CAPACITOR
	C777	QCSA1HJ-101	CAPACITOR
	C778	QCS11HJ-470	CAPACITOR
	L701	YU41134-121J	COIL
	L702	YU41134-560JY	COIL
	L703	PU48530-3R9J	COIL
	LPF1	PGZ01432	LOW PASS FILTER
	LPF701	PGZ01433	LOW PASS FILTER
	LPF702	PGZ01433	LOW PASS FILTER
	BPF701	PGZ01527	BAND PASS FILTER
	DL1	PGZ00545	DELAY LINE
⚠	X1	PGZ01521	VCXO
⚠	X2	PGZ01521	VCXO
	SW1	QSR0095-L04	SLIDE SWITCH
	SW2	QSS1K41-L01	DIP SW
	K101	PGZ00627Z	FERRATE BEADS
⚠	K501	PGZ00627Z	FERRATE BEADS
⚠	K701	PGZ00627Z	FERRATE BEADS
⚠	K702	PGZ00627Z	FERRATE BEADS
⚠	K703	PGZ00627Z	FERRATE BEADS
⚠	K704	PGZ00627Z	FERRATE BEADS
⚠	K705	PGZ00627Z	FERRATE BEADS
	SLD1	PRD30781-01-03	SHIELD PLATE
	GND1	PGZ00587-00	TEST POINT
	GND2	PGZ00587-00	TEST POINT
	GND3	PGZ00587-00	TEST POINT
	GND4	PGZ00587-00	TEST POINT
	GND5	PGZ00587-00	TEST POINT
	GND6	PGZ00587-00	TEST POINT
	GND7	PGZ00587-00	TEST POINT
	TP1	PGZ01015	TEST PIN
	TP2	PGZ01015	TEST PIN
	TP3	PGZ01015	TEST PIN
	TP4	PGZ01015	TEST PIN
	TP5	PGZ01015	TEST PIN
	TP6	PGZ01015	TEST PIN
	TP7	PGZ01015	TEST PIN
	TP8	PGZ01015	TEST PIN
	TP9	PGZ01015	TEST PIN
	TP10	PGZ01015	TEST PIN
	TP11	PGZ01015	TEST PIN
	TP12	PGZ01015	TEST PIN
	TP13	PGZ01015	TEST PIN
	TP14	PGZ01015	TEST PIN
	CN1	PGZ00421-44	MALE CONNECTOR
	CN2	PGZ00421-44	MALE CONNECTOR
	CN3	PGZ01518-100	H.P CONNECTOR
⚠	CP1	ICP-F10	CIRCUIT PROTECTOR
⚠	CP2	ICP-F20	CIRCUIT PROTECTOR

-BF DL BOARD ASSEMBLY-

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	PWBA	PRK20156A	BF DL PWB ASS'Y
	IC708	TC7S04F	IC
	R809	QRSA08J-102YN	RESISTOR
	C761	QCFA1HZ-103	CAPACITOR
	C779	QCSA1HJ-221	CAPACITOR

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* 4. TBC-2BOARD ASSEMBLY <61> *

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	PWBA	PRK10056A-03	TBC-2 PWB ASS'Y
	IC1	UPC78L12T	IC
	IC2	UPC78L05T	IC
	IC3	UPC78L05T	IC
	IC4	UPC78L05T	IC
	IC5	UPC78L12T	IC
	IC6	UPC78L05T	IC
	IC7	UPC78L12T	IC
	IC8	UPC78L12T	IC
	IC9	UPC78L05T	IC
	IC10	UPC78L12T	IC
	IC101	TC74HC4053AF	IC
	IC102	NJM5532M-D-X	IC
	IC103	M51271FP	IC
	IC104	UPC311G2	IC
	IC105	TC4W66F	IC
	IC106	UPC4082G2	IC
	IC107	UPC358G2	IC
	IC108	TC4W66F	IC
	IC109	UPC358G2	IC
	IC110	TC74HC4538AF	IC

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	IC111	TC74HC74AF	IC
	IC112	TC74HC4538AF	IC
⚠	IC113	TC74HC4538AF	IC
	IC114	TC74HC4538AF	IC
	IC115	UPC4082G2	IC
	IC301	LM6361M	IC
	IC302	AN6308S	IC
	IC303	AN6308S	IC
	IC304	LM6361M	IC
	IC305	NJM5532M-D-X	IC
	IC306	AN6308S	IC
	IC307	AN6308S	IC
	IC308	NJM5532M-D-X	IC
	IC309	AN6308S	IC
	IC310	AN6308S	IC
	Q101	2SC2412K(QR)	TRANSISTOR
	Q102	2SK621	FE TRANSISTOR
	Q103	2SC2412K(QR)	TRANSISTOR
	Q104	2SC2412K(QR)	TRANSISTOR
	Q105	2SA1037K(QR)	TRANSISTOR
	Q106	2SC2412K(QR)	TRANSISTOR
	Q107	2SA1037K(QR)	TRANSISTOR
	Q108	2SC2412K(QR)	TRANSISTOR
	Q109	2SA1037K(QR)	TRANSISTOR
	Q110	2SC2412K(QR)	TRANSISTOR
	Q111	2SA1037K(QR)	TRANSISTOR
	Q112	2SC2412K(QR)	TRANSISTOR
	Q113	2SC2412K(QR)	TRANSISTOR
	Q114	2SA1037K(QR)	TRANSISTOR
	Q115	2SC2412K(QR)	TRANSISTOR
	Q116	2SA1037K(QR)	TRANSISTOR
	Q117	2SC2412K(QR)	TRANSISTOR
	Q118	2SC2412K(QR)	TRANSISTOR
	Q119	2SA1037K(QR)	TRANSISTOR
	Q120	2SC2412K(QR)	TRANSISTOR
	Q121	2SA1037K(QR)	TRANSISTOR
	Q122	2SC2412K(QR)	TRANSISTOR
	Q301	2SA1037K(QR)	TRANSISTOR
	Q302	2SC2412K(QR)	TRANSISTOR
	Q303	2SC2412K(QR)	TRANSISTOR
	Q304	2SA1037K(QR)	TRANSISTOR
	Q305	2SC2412K(QR)	TRANSISTOR
	Q306	2SA1037K(QR)	TRANSISTOR
	Q307	2SC2412K(QR)	TRANSISTOR
	Q308	2SC2412K(QR)	TRANSISTOR
	Q309	2SC2412K(QR)	TRANSISTOR
	Q310	2SA1037K(QR)	TRANSISTOR
	Q311	2SC2412K(QR)	TRANSISTOR
	Q312	2SC2412K(QR)	TRANSISTOR
	Q313	2SC2412K(QR)	TRANSISTOR
	Q314	2SC2412K(QR)	TRANSISTOR
	Q315	2SC2412K(QR)	TRANSISTOR
	Q316	2SA1037K(QR)	TRANSISTOR
	Q317	2SC2412K(QR)	TRANSISTOR
	Q318	2SC2412K(QR)	TRANSISTOR
	Q319	2SC2412K(QR)	TRANSISTOR
	Q320	2SC2412K(QR)	TRANSISTOR
	Q321	2SC2412K(QR)	TRANSISTOR
	Q322	2SA1037K(QR)	TRANSISTOR
	Q323	2SC2412K(QR)	TRANSISTOR
	Q324	2SC2412K(QR)	TRANSISTOR
	R1	QVPB610-202	V RESISTOR
	R2	NVP1415-202N	V RESISTOR
	R3	QVPB610-501	V RESISTOR
	R4	NVP1415-202N	V RESISTOR
	R5	QVPB610-501	V RESISTOR
	R6	NVP1415-103N	V RESISTOR
	R7	NVP1415-103N	V RESISTOR
	R8	QVPB610-103	V RESISTOR
	R9	QVPB610-103	V RESISTOR
	R10	NVP1415-203N	V RESISTOR
	R11	NVP1415-202N	V RESISTOR
	R21	QVPB610-501	V RESISTOR
	R22	NVP1415-202N	V RESISTOR
	R23	QVPB610-102	V RESISTOR
	R24	NVP1415-202N	V RESISTOR
	R25	QVPB610-102	V RESISTOR
	R26	QVPB610-202	V RESISTOR
	R101	QRSA08J-333YN	RESISTOR
	R102	QRSA08J-181YN	RESISTOR
	R103	QRSA08J-181YN	RESISTOR
	R104	QRSA08J-333YN	RESISTOR
	R105	QRSA08J-681YN	RESISTOR
	R106	QRSA08J-681YN	RESISTOR
	R107	QRSA08J-152YN	RESISTOR
	R108	QRSA08J-152YN	RESISTOR
	R110	QRSA08J-681YN	RESISTOR
	R111	QRSA08J-681YN	RESISTOR
	R112	QRSA08J-681YN	RESISTOR
	R113	QRSA08J-681YN	RESISTOR
	R114	QRSA08J-181YN	RESISTOR
	R115	QRSA08J-122YN	RESISTOR
	R116	QRSA08J-122YN	RESISTOR
	R117	QRSA08J-181YN	RESISTOR
	R118	QRSA08J-122YN	RESISTOR
	R119	QRSA08J-122YN	RESISTOR
	R120	QRSA08J-122YN	RESISTOR
	R121	QRSA08J-821YN	RESISTOR
	R122	QRSA08J-821YN	RESISTOR
	R123	QRSA08J-333YN	RESISTOR
	R124	QRSA08J-223YN	RESISTOR
	R125	QRSA08J-681YN	RESISTOR
	R126	QRSA08J-681YN	RESISTOR
	R127	NRVA62D-102N	RESISTOR
	R128	NRVA62D-471N	RESISTOR
	R129	QRSA08J-181YN	RESISTOR
	R130	QRSA08J-181YN	RESISTOR
	R131	QRSA08J-181YN	RESISTOR
	R132	QRSA08J-122YN	RESISTOR
	R133	QRSA08J-821YN	RESISTOR
	R134	QRSA08J-181YN	RESISTOR
	R135	QRSA08J-471YN	RESISTOR
	R136	QRSA08J-122YN	RESISTOR
	R137	QRSA08J-821YN	RESISTOR
	R138	QRSA08J-821YN	RESISTOR
	R139	QRSA08J-333YN	RESISTOR
	R140	QRSA08J-223YN	RESISTOR
	R141	QRSA08J-681YN	RESISTOR
	R142	QRSA08J-681YN	RESISTOR
	R143	NRVA62D-102N	RESISTOR
	R144	NRVA62D-102N	RESISTOR
	R145	QRSA08J-181YN	RESISTOR
	R146	QRSA08J-181YN	RESISTOR
	R147	QRSA08J-181YN	RESISTOR
	R148	QRSA08J-122YN	RESISTOR
	R149	QRSA08J-821YN	RESISTOR
	R150	QRSA08J-471YN	RESISTOR
	R151	QRSA08J-181YN	RESISTOR
	R152	QRSA08J-823YN	RESISTOR
	R153	QRSA08J-332YN	RESISTOR
	R154	QRSA08J-474YN	RESISTOR
	R155	QRSA08J-684YN	RESISTOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	R156	QRSA08J-223YN	RESISTOR
	R157	QRSA08J-153YN	RESISTOR
	R158	QRSA08J-153YN	RESISTOR
	R159	QRSA08J-223YN	RESISTOR
	R160	QRSA08J-223YN	RESISTOR
	R161	QRSA08J-102YN	RESISTOR
	R163	QRSA08J-393YN	RESISTOR
	R164	QRSA08J-103YN	RESISTOR
	R165	QRSA08J-102YN	RESISTOR
	R166	QRSA08J-181YN	RESISTOR
	R167	QRSA08J-122YN	RESISTOR
	R168	QRSA08J-152YN	RESISTOR
	R169	QRSA08J-122YN	RESISTOR
	R170	QRSA08J-122YN	RESISTOR
	R171	QRSA08J-103YN	RESISTOR
	R172	QRSA08J-472YN	RESISTOR
	R173	QRSA08J-104YN	RESISTOR
	R174	QRSA08J-122YN	RESISTOR
	R175	QRSA08J-103YN	RESISTOR
	R176	QRSA08J-102YN	RESISTOR
	R177	QRSA08J-103YN	RESISTOR
	R178	QRSA08J-221YN	RESISTOR
	R179	QRSA08J-103YN	RESISTOR
	R180	QRSA08J-221YN	RESISTOR
	R181	QRSA08J-101YN	RESISTOR
	R182	QRSA08J-102YN	RESISTOR
	R183	QRSA08J-102YN	RESISTOR
	R184	QRSA08J-562YN	RESISTOR
	R185	QRSA08J-104YN	RESISTOR
	R186	QRSA08J-272YN	RESISTOR
	R187	QRSA08J-102YN	RESISTOR
	R188	QRSA08J-103YN	RESISTOR
	R189	NRVA62D-682N	RESISTOR
	R190	NRVA62D-332N	RESISTOR
	R191	NRVA62D-153N	RESISTOR
	R192	QRSA08J-103YN	RESISTOR
	R193	NRVA62D-102N	RESISTOR
	R194	NRVA62D-103N	RESISTOR
	R195	NRVA62D-103N	RESISTOR
	R196	NRVA62D-103N	RESISTOR
	R198	QRSA08J-0R0Y	RESISTOR
	R200	QRSA08J-103YN	RESISTOR
	R201	QRSA08J-102YN	RESISTOR
	R202	QRSA08J-104YN	RESISTOR
	R203	QRSA08J-223YN	RESISTOR
	R204	QRSA08J-223YN	RESISTOR
	R205	QRSA08J-182YN	RESISTOR
	R206	QRSA08J-102YN	RESISTOR
	R207	QRSA08J-102YN	RESISTOR
	R208	QRSA08J-681YN	RESISTOR
	R209	QRSA08J-102YN	RESISTOR
	R210	QRSA08J-0R0Y	RESISTOR
	R212	QRSA08J-0R0Y	RESISTOR
	R213	QRSA08J-0R0Y	RESISTOR
	R214	QRD161J-0R0	RESISTOR
	R301	QRSA08J-563YN	RESISTOR
	R302	QRSA08J-333YN	RESISTOR
	R303	QRSA08J-181YN	RESISTOR
	R304	QRSA08J-181YN	RESISTOR
	R305	QRSA08J-821YN	RESISTOR
	R306	QRSA08J-0R0Y	RESISTOR
	R307	QRSA08J-152YN	RESISTOR
	R308	QRSA08J-391YN	RESISTOR
	R309	QRSA08J-391YN	RESISTOR
	R310	QRSA08J-821YN	RESISTOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	R311	QRSA08J-152YN	RESISTOR
	R312	QRSA08J-563YN	RESISTOR
	R313	QRSA08J-333YN	RESISTOR
	R314	QRSA08J-333YN	RESISTOR
	R315	QRSA08J-333YN	RESISTOR
	R316	QRSA08J-102YN	RESISTOR
	R317	QRSA08J-121YN	RESISTOR
	R318	QRSA08J-152YN	RESISTOR
	R319	QRSA08J-181YN	RESISTOR
	R320	QRSA08J-181YN	RESISTOR
	R321	QRSA08J-181YN	RESISTOR
	R322	QRSA08J-122YN	RESISTOR
	R323	QRSA08J-821YN	RESISTOR
	R324	QRSA08J-181YN	RESISTOR
	R325	QRSA08J-122YN	RESISTOR
	R326	QRSA08J-122YN	RESISTOR
	R327	QRSA08J-391YN	RESISTOR
	R328	QRSA08J-391YN	RESISTOR
	R329	QRSA08J-332YN	RESISTOR
	R330	QRSA08J-103YN	RESISTOR
	R331	QRSA08J-181YN	RESISTOR
	R332	QRD161J-220	RESISTOR
	R333	QRV141F-1001AY	CMF RESISTOR
	R334	QRSA08J-103YN	RESISTOR
	R335	QRSA08J-181YN	RESISTOR
	R336	QRSA08J-122YN	RESISTOR
	R337	QRSA08J-333YN	RESISTOR
	R338	QRSA08J-333YN	RESISTOR
	R339	QRSA08J-102YN	RESISTOR
	R340	QRSA08J-152YN	RESISTOR
	R341	QRSA08J-181YN	RESISTOR
	R342	QRSA08J-181YN	RESISTOR
	R343	QRSA08J-821YN	RESISTOR
	R344	QRSA08J-821YN	RESISTOR
	R345	QRSA08J-821YN	RESISTOR
	R346	QRSA08J-103YN	RESISTOR
	R347	QRD161J-750	RESISTOR
	R348	QRSA08J-223YN	RESISTOR
	R349	QRSA08J-223YN	RESISTOR
	R350	QRSA08J-181YN	RESISTOR
	R351	QRSA08J-122YN	RESISTOR
	R352	NRVA62D-331N	RESISTOR
	R353	QRSA08J-561YN	RESISTOR
	R354	QRSA08J-333YN	RESISTOR
	R355	QRSA08J-223YN	RESISTOR
	R356	QRSA08J-681YN	RESISTOR
	R357	QRSA08J-681YN	RESISTOR
	R358	NRVA62D-102N	RESISTOR
	R359	NRVA62D-561N	RESISTOR
	R360	QRSA08J-181YN	RESISTOR
	R361	QRV141F-2940AY	CMF RESISTOR
	R362	QRV141F-6810AY	CMF RESISTOR
	R363	QRSA08J-181YN	RESISTOR
	R364	QRSA08J-122YN	RESISTOR
	R365	QRSA08J-333YN	RESISTOR
	R366	QRSA08J-333YN	RESISTOR
	R367	NRVA62D-102N	RESISTOR
	R368	NRVA62D-152N	RESISTOR
	R369	QRSA08J-181YN	RESISTOR
	R370	QRSA08J-181YN	RESISTOR
	R371	QRSA08J-821YN	RESISTOR
	R372	QRSA08J-821YN	RESISTOR
	R373	QRSA08J-821YN	RESISTOR
	R374	QRSA08J-103YN	RESISTOR
	R375	QRD161J-750	RESISTOR
	R376	QRSA08J-223YN	RESISTOR
	R377	QRSA08J-181YN	RESISTOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	R378	QRSA08J-333YN	RESISTOR
	R379	QRSA08J-122YN	RESISTOR
	R380	NRVA62D-821N	RESISTOR
	R381	QRSA08J-821YN	RESISTOR
	R382	QRSA08J-333YN	RESISTOR
	R383	QRSA08J-223YN	RESISTOR
	R384	QRSA08J-681YN	RESISTOR
	R385	QRSA08J-681YN	RESISTOR
	R386	NRVA62D-102N	RESISTOR
	R387	NRVA62D-561N	RESISTOR
	R388	QRSA08J-181YN	RESISTOR
	R389	QRV141F-2940AY	CMF RESISTOR
	R390	QRV141F-6810AY	CMF RESISTOR
	R391	QRSA08J-181YN	RESISTOR
	R392	QRSA08J-122YN	RESISTOR
	R393	QRSA08J-333YN	RESISTOR
	R394	QRSA08J-333YN	RESISTOR
	R395	NRVA62D-102N	RESISTOR
	R396	NRVA62D-152N	RESISTOR
	R397	QRSA08J-181YN	RESISTOR
	R398	QRSA08J-181YN	RESISTOR
	R399	QRSA08J-821YN	RESISTOR
	R400	QRSA08J-821YN	RESISTOR
	R401	QRSA08J-821YN	RESISTOR
	R402	QRSA08J-103YN	RESISTOR
	R403	QRD161J-750	RESISTOR
	R404	QRSA08J-181YN	RESISTOR
	R405	QRSA08J-122YN	RESISTOR
	R406	QRSA08J-0R0Y	RESISTOR
	R407	QRSA08J-0R0Y	RESISTOR
	C101	QCFA1EZ-104	CAPACITOR
	C103	QCSA1HJ-121	CAPACITOR
	C104	QCFA1EZ-104	CAPACITOR
	C105	QETC1AM-107	E CAPACITOR
	C106	QETC1AM-107	E CAPACITOR
	C107	QCFA1HZ-103	CAPACITOR
	C108	QETC1AM-107	E CAPACITOR
	C109	QCSA1HJ-101	CAPACITOR
	C110	QETC1AM-107	E CAPACITOR
	C111	QCSA1HJ-470	CAPACITOR
	C112	QETC1AM-107	E CAPACITOR
	C113	QETC1AM-107	E CAPACITOR
	C114	QCSA1HJ-101	CAPACITOR
	C115	QCSA1HJ-470	CAPACITOR
	C116	QETC1AM-107	E CAPACITOR
	C117	QETC1AM-107	E CAPACITOR
	C118	QETC1CM-107	E CAPACITOR
	C119	QCFA1HZ-103	CAPACITOR
	C120	QCFA1HZ-103	CAPACITOR
	C121	QETC1HM-105	E CAPACITOR
	C122	QFV71HJ-474	TF CAPACITOR
	C123	QETC1AM-107	E CAPACITOR
	C124	QCFA1EZ-473	CAPACITOR
	C125	QCFA1EZ-473	CAPACITOR
	C126	QCFA1EZ-104	CAPACITOR
	C127	QETC1HM-105	E CAPACITOR
	C128	QCFA1HZ-102	CAPACITOR
	C129	QCFA1HZ-102	CAPACITOR
	C130	QCFA1HZ-103	CAPACITOR
	C131	QETC1AM-476	E CAPACITOR
	C132	QCFA1HZ-103	CAPACITOR
	C133	QCFA1HZ-103	CAPACITOR
	C134	QCFA1HZ-103	CAPACITOR
	C135	QCFA1EZ-104	CAPACITOR
	C136	QCFA1HZ-103	CAPACITOR
	C137	QCFA1HZ-103	CAPACITOR
	C138	QCSA1HJ-560	CAPACITOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	C139	QCSA1HJ-121	CAPACITOR
	C140	QCFA1HZ-103	CAPACITOR
	C141	NFV21CJ-102AY	PP CAPACITOR
	C142	NFV21CJ-102AY	PP CAPACITOR
	C143	QCFA1HZ-103	CAPACITOR
	C144	QENC1HM-225	NP E CAPACITOR
	C145	QETC1AM-107	E CAPACITOR
	C146	QCFA1HZ-103	CAPACITOR
	C147	QCFA1HZ-103	CAPACITOR
	C148	QETC1AM-107	E CAPACITOR
	C149	QCFA1HZ-103	CAPACITOR
	C150	QCFA1HZ-103	CAPACITOR
	C151	QCFA1HZ-103	CAPACITOR
	C152	QCFA1HZ-103	CAPACITOR
	C153	QETC1AM-476	E CAPACITOR
	C154	QCFA1HZ-103	CAPACITOR
	C155	QETC1AM-476	E CAPACITOR
	C156	QCFA1HZ-103	CAPACITOR
	C157	QCFA1HZ-103	CAPACITOR
	C158	QETC1AM-107	E CAPACITOR
	C159	QCFA1HZ-103	CAPACITOR
	C160	QCFA1HZ-103	CAPACITOR
	C161	QFN41HJ-102	M CAPACITOR
	C162	QCFA1HZ-103	CAPACITOR
	C163	QCFA1HZ-103	CAPACITOR
	C164	QFN41HJ-102	M CAPACITOR
	C165	QFN41HJ-392	M CAPACITOR
	C166	QCFA1HZ-103	CAPACITOR
	C167	QCSA1HJ-101	CAPACITOR
	C168	QFN41HJ-182	M CAPACITOR
	C169	QCFA1HZ-103	CAPACITOR
	C170	QCSA1HJ-560	CAPACITOR
	C171	QCSA1HJ-331	CAPACITOR
	C172	QCFA1HZ-103	CAPACITOR
	C173	QFN41HJ-102	M CAPACITOR
	C174	QETC1AM-107	E CAPACITOR
	C175	QCFA1HZ-103	CAPACITOR
	C176	QCFA1HZ-103	CAPACITOR
	C177	QCFA1CZ-334	CAPACITOR
	C178	QETC1CM-107	E CAPACITOR
	C179	QCFA1HZ-103	CAPACITOR
	C180	QCFA1HZ-103	CAPACITOR
	C181	QCFA1HZ-103	CAPACITOR
	C182	QCFA1HZ-102	CAPACITOR
	C183	QETC1CM-107	E CAPACITOR
	C184	QCFA1HZ-103	CAPACITOR
	C185	QCFA1HZ-103	CAPACITOR
	C301	QETC1AM-107	E CAPACITOR
	C302	QETC1CM-476	E CAPACITOR
	C303	QETC1AM-107	E CAPACITOR
	C304	QCFA1HZ-103	CAPACITOR
	C305	QETC1AM-107	E CAPACITOR
	C306	QCSA1HJ-3R0	CAPACITOR
	C307	QETC1AM-107	E CAPACITOR
	C308	QETC1AM-107	E CAPACITOR
	C309	QETC1AM-107	E CAPACITOR
	C310	QCFA1HZ-103	CAPACITOR
	C311	QETC1AM-107	E CAPACITOR
	C312	QETC1AM-107	E CAPACITOR
	C313	QETC1AM-107	E CAPACITOR
	C314	QCFA1HZ-103	CAPACITOR
	C315	QETC1AM-107	E CAPACITOR
	C316	QETC1AM-107	E CAPACITOR
	C317	QETC1AM-107	E CAPACITOR
	C318	QETC1CM-336	E CAPACITOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	C319	QETC1CM-107	E CAPACITOR
	C320	QCFA1HZ-103	CAPACITOR
	C321	QCFA1HZ-103	CAPACITOR
	C322	QETC1AM-107	E CAPACITOR
	C323	QETC1AM-107	E CAPACITOR
	C324	QCSA1HJ-101	CAPACITOR
	C325	QCFA1HZ-103	CAPACITOR
	C326	QETC1AM-107	E CAPACITOR
	C327	QCSA1HJ-470	CAPACITOR
	C328	QETC1AM-107	E CAPACITOR
	C329	QCFA1HZ-103	CAPACITOR
	C330	QETC1AM-107	E CAPACITOR
	C331	QETC1AM-107	E CAPACITOR
	C332	QETC1AM-107	E CAPACITOR
	C333	QCFA1HZ-103	CAPACITOR
	C334	QETC1AM-107	E CAPACITOR
	C335	QETC1AM-107	E CAPACITOR
	C336	QCSA1HJ-470	CAPACITOR
	C337	QETC1AM-107	E CAPACITOR
	C338	QETC1AM-107	E CAPACITOR
	C339	QETC1CM-336	E CAPACITOR
	C340	QETC1CM-107	E CAPACITOR
	C341	QCFA1HZ-103	CAPACITOR
	C342	QCFA1HZ-103	CAPACITOR
	C343	QETC1AM-107	E CAPACITOR
	C344	QCFA1HZ-103	CAPACITOR
	C345	QCFA1HZ-103	CAPACITOR
	C346	QETC1AM-107	E CAPACITOR
	C347	QETC1AM-107	E CAPACITOR
	C348	QCSA1HJ-101	CAPACITOR
	C349	QCFA1HZ-103	CAPACITOR
	C350	QETC1AM-107	E CAPACITOR
	C351	QCSA1HJ-470	CAPACITOR
	C352	QETC1AM-107	E CAPACITOR
	C353	QCFA1HZ-103	CAPACITOR
	C354	QETC1AM-107	E CAPACITOR
	C355	QETC1AM-107	E CAPACITOR
	C356	QETC1AM-107	E CAPACITOR
	C357	QCFA1HZ-103	CAPACITOR
	C358	QETC1AM-107	E CAPACITOR
	C359	QETC1AM-107	E CAPACITOR
	C360	QCSA1HJ-470	CAPACITOR
	C361	QETC1AM-107	E CAPACITOR
	C362	QETC1AM-107	E CAPACITOR
	C363	QETC1CM-336	E CAPACITOR
	C364	QETC1CM-107	E CAPACITOR
	C365	QCFA1HZ-103	CAPACITOR
	C366	QCFA1HZ-103	CAPACITOR
	C367	QCFA1HZ-103	CAPACITOR
	L101	YU41134-121J	COIL
	L102	YU41134-221JY	COIL
	LPF101	PGZ01526	LOW PASS FILTER
	LPF102	PGZ01526	LOW PASS FILTER
	LPF301	PGZ01431	LOW PASS FILTER
	LPF302	PGZ00131-002	DELAY LINE
	X101	PGZ01426	CRYSTAL RESONATOR
	SW1	PU54440	SWITCH
	TH301	ERT-D2FHK-202S	THERMISTOR
	TH302	ERT-D2FHK-202S	THERMISTOR
	SLD1	PRD30781-02-03	SHIELD PLATE
	GND1	PGZ00587-00	TEST POINT
	TP1	PGZ01015	TEST PIN
	CN1	PGZ00421-64	MALE CONNECTOR

5. TBC-3 BOARD ASSEMBLY <62>

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	PWBA	PRK10070A-01	TBC-3 PWB ASS'Y
	IC1	UPC78L12T	IC
	IC2	UPC78L05T	IC
	IC3	UPC78L05T	IC
	IC4	UPC78L05T	IC
	IC5	UPC78L05T	IC
	IC6	UPC79N12H	IC
	IC8	UPC78L05T	IC
	IC10	UPC78L05T	IC
	IC11	UPC78L05T	IC
	IC12	UPC78L05T	IC
	IC13	UPC79N05H	IC
	IC14	UPC78L05T	IC
	IC15	UPC78L12T	IC
	IC16	UPC78L05T	IC
	IC19	UPC78L05T	IC
	IC20	UPC78L05T	IC
	IC101	TC74HC4538AF	IC
	IC102	TC74HC08AF	IC
	IC103	CXA1228S	IC
	IC104	UPC311G2	IC
	IC105	SN75158PS	IC
	IC106	TC7W04F	IC
	IC107	TC74HC74AF	IC
	IC108	LA7213	IC
	IC109	TC74HC74AF	IC
	IC301	UPC4082G2	IC
	IC302	TC4053BF	IC
	IC303	UPC4082G2	IC
	IC304	UPC319G2	IC
	IC305	TC74HC541AF	IC
	IC306	LA7213	IC
	IC307	TC74HC14AF	IC
	IC308	SN74LS221NS	IC
	IC309	SN74LS221NS	IC
	IC310	TC74HC4538AF	IC
	IC311	TC7S08F	IC
	IC313	TC74HC221AF	IC
	IC315	M51957BL	IC
	IC317	JCL0003	IC
	IC318	TC4W66F	IC
	IC319	UPC4074G2	IC
	IC320	SN74LS628NS	IC
	IC321	TC7S04F	IC
	IC322	MN50005JVES	IC
	IC501	TC74HC541AF	IC
	IC502	TC74HC221AF	IC
	IC503	TC74HC157AF	IC
	IC504	TC74HC221AF	IC
	IC505	SN7406NS	IC
	IC506	RC4560M	IC
	IC507	UPC319G2	IC
	IC508	TC7W04F	IC
	IC509	SN75158PS	IC

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	IC510	TC74HC157AF	IC
	IC511	JCL0005	IC
	IC512	TC7S32F	IC
	IC522	TC4069UBF	IC
	IC523	TC4W66F	IC
	IC524	UPC4074G2	IC
	IC525	TC7W04F	IC
	IC527	TC4W53F	IC
	Q101	2SA1037K(QR)	TRANSISTOR
	Q102	2SA1037K(QR)	TRANSISTOR
	Q103	2SC2412K(QR)	TRANSISTOR
	Q105	2SC2412K(QR)	TRANSISTOR
	Q113	2SC2412K(QR)	TRANSISTOR
	Q114	2SC2412K(QR)	TRANSISTOR
	Q115	2SK621	FE TRANSISTOR
	Q116	2SK621	FE TRANSISTOR
	Q117	2SK621	FE TRANSISTOR
	Q118	2SA1036K(R)	TRANSISTOR
	Q119	2SC2412K(QR)	TRANSISTOR
	Q301	2SA1037K(QR)	TRANSISTOR
	Q302	2SA1037K(QR)	TRANSISTOR
	Q303	2SC2412K(QR)	TRANSISTOR
	Q304	2SA1037K(QR)	TRANSISTOR
	Q305	2SA1037K(QR)	TRANSISTOR
	Q306	2SC2412K(QR)	TRANSISTOR
	Q308	2SA1037K(QR)	TRANSISTOR
	Q309	2SA1037K(QR)	TRANSISTOR
	Q310	2SC2412K(QR)	TRANSISTOR
	Q311	2SC2412K(QR)	TRANSISTOR
	Q312	2SA1037K(QR)	TRANSISTOR
	Q313	2SC2412K(QR)	TRANSISTOR
	Q501	2SA1037K(QR)	TRANSISTOR
	Q502	2SA1037K(QR)	TRANSISTOR
	Q508	2SA1037K(QR)	TRANSISTOR
	Q509	2SC2412K(QR)	TRANSISTOR
	Q510	2SA1037K(QR)	TRANSISTOR
	Q511	2SC2412K(QR)	TRANSISTOR
	Q512	2SC2412K(QR)	TRANSISTOR
	Q513	2SC2412K(QR)	TRANSISTOR
	Q514	2SK621	FE TRANSISTOR
	D101	DAN202K	DIODE
	D102	DAP202K	DIODE
	D103	DAN202K	DIODE
	D301	DAP202K	DIODE
	D302	DAN202K	DIODE
	D303	DAN202K	DIODE
	D502	DAP202K	DIODE
	D503	1SV68-40	DIODE
	D504	1SV68-40	DIODE
	D505	DA204K	DIODE
	R1	NVP1415-501N	V RESISTOR
	R2	NVP1415-103N	V RESISTOR
	R3	QVPB610-103	V RESISTOR
	R4	NVP1415-103N	V RESISTOR
	R5	NVP1415-102N	V RESISTOR
	R7	NVP1415-503N	V RESISTOR
	R8	NVP1415-103N	V RESISTOR
	R10	NVP1415-302N	V RESISTOR
	R11	NVP1415-103N	V RESISTOR
	R12	QVPB610-103	V RESISTOR
	R15	NVP1415-103N	V RESISTOR
	R101	QRSA08J-333YN	RESISTOR
	R102	QRSA08J-333YN	RESISTOR
	R103	QRSA08J-272YN	RESISTOR
	R104	QRSA08J-272YN	RESISTOR
	R105	QRSA08J-222YN	RESISTOR
	R106	QRSA08J-181YN	RESISTOR
	R107	QRSA08J-472YN	RESISTOR
	R108	QRSA08J-473YN	RESISTOR
	R109	QRSA08J-183YN	RESISTOR
	R111	QRSA08J-122YN	RESISTOR
	R114	QRSA08J-471YN	RESISTOR
	R115	QRSA08J-181YN	RESISTOR
	R116	QRSA08J-821YN	RESISTOR
	R117	QRSA08J-331YN	RESISTOR
	R118	QRSA08J-224YN	RESISTOR
	R119	QRSA08J-821YN	RESISTOR
	R120	QRSA08J-471YN	RESISTOR
	R121	QRSA08J-102YN	RESISTOR
	R122	QRSA08J-101YN	RESISTOR
	R130	QRSA08J-333YN	RESISTOR
	R131	QRSA08J-394YN	RESISTOR
	R132	QRSA08J-182YN	RESISTOR
	R133	QRSA08J-392YN	RESISTOR
	R134	QRSA08J-184YN	RESISTOR
	R135	QRSA08J-153YN	RESISTOR
	R136	QRSA08J-153YN	RESISTOR
	R137	QRSA08J-272YN	RESISTOR
	R138	QRSA08J-332YN	RESISTOR
	R139	QRSA08J-104YN	RESISTOR
	R140	QRSA08J-183YN	RESISTOR
	R141	QRSA08J-472YN	RESISTOR
	R142	QRSA08J-103YN	RESISTOR
	R143	QRSA08J-153YN	RESISTOR
	R144	QRSA08J-181YN	RESISTOR
	R145	QRSA08J-105YN	RESISTOR
	R146	QRSA08J-223YN	RESISTOR
	R147	QRSA08J-333YN	RESISTOR
	R148	QRSA08J-181YN	RESISTOR
	R149	QRSA08J-122YN	RESISTOR
	R150	QRSA08J-561YN	RESISTOR
	R151	QRSA08J-561YN	RESISTOR
	R152	QRSA08J-103YN	RESISTOR
	R153	QRSA08J-102YN	RESISTOR
	R154	QRSA08J-103YN	RESISTOR
	R155	QRSA08J-102YN	RESISTOR
	R156	QRSA08J-102YN	RESISTOR
	R157	QRSA08J-681YN	RESISTOR
	R158	QRSA08J-102YN	RESISTOR
	R159	QRSA08J-221YN	RESISTOR
	R160	QRSA08J-221YN	RESISTOR
	R161	QRSA08J-222YN	RESISTOR
	R162	QRSA08J-391YN	RESISTOR
	R163	QRSA08J-222YN	RESISTOR
	R164	QRSA08J-103YN	RESISTOR
	R301	QRSA08J-181YN	RESISTOR
	R302	QRSA08J-103YN	RESISTOR
	R303	QRSA08J-392YN	RESISTOR
	R304	QRSA08J-272YN	RESISTOR
	R305	QRSA08J-222YN	RESISTOR
	R306	QRSA08J-181YN	RESISTOR
	R307	QRSA08J-332YN	RESISTOR
	R308	QRSA08J-473YN	RESISTOR
	R309	QRSA08J-183YN	RESISTOR
	R310	QRSA08J-222YN	RESISTOR
	R311	QRSA08J-122YN	RESISTOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	R312	QRSA08J-122YN	RESISTOR
	R313	QRSA08J-101YN	RESISTOR
	R314	QRSA08J-681YN	RESISTOR
	R315	QRSA08J-221YN	RESISTOR
	R316	QRSA08J-222YN	RESISTOR
	R317	QRSA08J-222YN	RESISTOR
	R318	QRSA08J-222YN	RESISTOR
	R319	QRSA08J-471YN	RESISTOR
	R320	QRSA08J-471YN	RESISTOR
	R321	QRSA08J-472YN	RESISTOR
	R322	QRSA08J-331YN	RESISTOR
	R323	QRSA08J-471YN	RESISTOR
	R324	QRSA08J-681YN	RESISTOR
	R325	QRSA08J-681YN	RESISTOR
	R326	QRSA08J-222YN	RESISTOR
	R327	QRSA08J-222YN	RESISTOR
	R328	QRSA08J-822YN	RESISTOR
	R329	QRSA08J-123YN	RESISTOR
	R330	QRSA08J-101YN	RESISTOR
	R331	QRSA08J-101YN	RESISTOR
	R332	QRSA08J-101YN	RESISTOR
	R334	QRSA08J-333YN	RESISTOR
	R335	QRSA08J-473YN	RESISTOR
	R336	QRSA08J-102YN	RESISTOR
	R337	QRSA08J-181YN	RESISTOR
	R338	QRSA08J-102YN	RESISTOR
	R339	QRSA08J-471YN	RESISTOR
	R340	QRSA08J-102YN	RESISTOR
	R341	QRSA08J-333YN	RESISTOR
	R342	QRSA08J-561YN	RESISTOR
	R343	QRSA08J-222YN	RESISTOR
	R344	NRVA62D-203N	CMF RESISTOR
	R345	QRSA08J-472YN	RESISTOR
	R346	QRSA08J-472YN	RESISTOR
	R347	NRVA62D-243N	CMF RESISTOR
	R348	NRVA62D-473N	RESISTOR
	R349	NRVA62D-123N	RESISTOR
	R350	QRSA08J-474YN	RESISTOR
	R351	QRSA08J-472YN	RESISTOR
	R353	QRSA08J-223YN	RESISTOR
	R354	QRSA08J-562YN	RESISTOR
	R362	QRSA08J-473YN	RESISTOR
	R363	QRSA08J-562YN	RESISTOR
	R364	QRSA08J-272YN	RESISTOR
	R365	QRSA08J-103YN	RESISTOR
	R366	QRSA08J-103YN	RESISTOR
	R367	QRSA08J-103YN	RESISTOR
	R368	QRSA08J-222YN	RESISTOR
	R369	QRSA08J-222YN	RESISTOR
	R370	QRSA08J-222YN	RESISTOR
	R371	QRSA08J-222YN	RESISTOR
	R372	QRSA08J-472YN	RESISTOR
	R373	QRSA08J-472YN	RESISTOR
	R375	QRSA08J-103YN	RESISTOR
	R376	QRSA08J-473YN	RESISTOR
	R377	QRSA08J-125YN	RESISTOR
	R378	QRSA08J-243YN	RESISTOR
	R379	QRSA08J-472YN	RESISTOR
	R380	QRSA08J-472YN	RESISTOR
	R381	QRSA08J-333YN	RESISTOR
	R382	QRSA08J-333YN	RESISTOR
	R383	NRVA62D-621N	RESISTOR
	R384	QRSA08J-101YN	RESISTOR
	R385	QRSA08J-222YN	RESISTOR
	R386	QRSA08J-682YN	RESISTOR
	R387	QRSA08J-682YN	RESISTOR
	R388	QRSA08J-153YN	RESISTOR
	R389	QRSA08J-153YN	RESISTOR
	R390	QRSA08J-393YN	RESISTOR
	R391	QRSA08J-101YN	RESISTOR
	R392	QRSA08J-101YN	RESISTOR
	R393	QRSA08J-101YN	RESISTOR
	R394	QRSA08J-101YN	RESISTOR
	R395	QRSA08J-331YN	RESISTOR
	R396	QRSA08J-224YN	RESISTOR
	R397	QRD167J-473	RESISTOR
	R501	QRSA08J-101YN	RESISTOR
	R502	QRSA08J-101YN	RESISTOR
	R503	QRSA08J-563YN	RESISTOR
	R504	QRSA08J-273YN	RESISTOR
	R505	QRSA08J-101YN	RESISTOR
	R506	QRSA08J-332YN	RESISTOR
	R507	QRSA08J-101YN	RESISTOR
	R508	QRSA08J-273YN	RESISTOR
	R510	QRSA08J-473YN	RESISTOR
	R511	QRSA08J-473YN	RESISTOR
	R512	QRSA08J-473YN	RESISTOR
	R513	QRSA08J-473YN	RESISTOR
	R514	QRSA08J-103YN	RESISTOR
	R515	QRSA08J-680YN	RESISTOR
	R516	QRSA08J-560YN	RESISTOR
	R517	QRSA08J-333YN	RESISTOR
	R518	QRSA08J-102YN	RESISTOR
	R519	QRSA08J-182YN	RESISTOR
	R520	QRSA08J-182YN	RESISTOR
	R521	QRSA08J-473YN	RESISTOR
	R522	QRSA08J-222YN	RESISTOR
	R523	QRSA08J-333YN	RESISTOR
	R524	QRSA08J-103YN	RESISTOR
	R525	QRSA08J-680YN	RESISTOR
	R526	QRSA08J-560YN	RESISTOR
	R527	QRSA08J-101YN	RESISTOR
	R528	QRSA08J-101YN	RESISTOR
	R529	QRSA08J-101YN	RESISTOR
	R530	QRSA08J-101YN	RESISTOR
	R531	QRSA08J-101YN	RESISTOR
	R532	QRSA08J-101YN	RESISTOR
	R533	QRSA08J-101YN	RESISTOR
	R534	QRSA08J-101YN	RESISTOR
	R535	QRSA08J-101YN	RESISTOR
	R536	QRSA08J-101YN	RESISTOR
	R537	QRSA08J-101YN	RESISTOR
	R538	QRSA08J-101YN	RESISTOR
	R539	QRSA08J-472YN	RESISTOR
	R540	QRSA08J-101YN	RESISTOR
	R541	QRSA08J-101YN	RESISTOR
	R573	QRSA08J-224YN	RESISTOR
	R574	QRSA08J-154YN	RESISTOR
	R575	QRSA08J-104YN	RESISTOR
	R576	QRSA08J-101YN	RESISTOR
	R577	QRSA08J-104YN	RESISTOR
	R578	QRSA08J-224YN	RESISTOR
	R579	QRSA08J-154YN	RESISTOR
	R580	QRSA08J-103YN	RESISTOR
	R581	QRSA08J-103YN	RESISTOR
	R582	QRSA08J-222YN	RESISTOR
	R583	QRSA08J-222YN	RESISTOR
	R584	QRSA08J-222YN	RESISTOR
	R585	QRSA08J-222YN	RESISTOR
	R586	QRSA08J-472YN	RESISTOR
	R587	QRSA08J-472YN	RESISTOR
	R588	QRSA08J-103YN	RESISTOR
	R590	QRSA08J-473YN	RESISTOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	R591	QRSA08J-514YN	RESISTOR
	R592	QRSA08J-683YN	RESISTOR
	R593	QRSA08J-222YN	RESISTOR
	R595	QRSA08J-103YN	RESISTOR
	R596	QRSA08J-103YN	RESISTOR
	R597	QRSA08J-104YN	RESISTOR
	R598	QRSA08J-181YN	RESISTOR
	R599	QRSA08J-152YN	RESISTOR
	R600	QRSA08J-181YN	RESISTOR
	R601	QRSA08J-152YN	RESISTOR
	R602	QRSA08J-221YN	RESISTOR
	R603	QRSA08J-105YN	RESISTOR
	R605	QRSA08J-473YN	RESISTOR
	R606	QRSA08J-101YN	RESISTOR
	R607	QRSA08J-101YN	RESISTOR
	R608	QRSA08J-101YN	RESISTOR
	R609	QRSA08J-101YN	RESISTOR
	R610	QRSA08J-514YN	RESISTOR
	C101	QEN61AM-226	E CAPACITOR
	C102	QETC1CM-476	E CAPACITOR
	C103	QETC1CM-476	E CAPACITOR
	C105	QCSA1HJ-391	CAPACITOR
	C106	QETC1CM-107	E CAPACITOR
	C107	QCFA1HZ-103	CAPACITOR
	C108	QCFA1EZ-104	CAPACITOR
	C109	QEN61EM-335	NP E CAPACITOR
	C110	QEF81AM-106	TANTAL CAPACITOR
	C111	QCFA1HZ-103	CAPACITOR
	C112	QCYA1HK-273	CAPACITOR
	C113	QCFA1HZ-103	CAPACITOR
	C114	QCFA1HZ-103	CAPACITOR
	C115	QETC1AM-107	E CAPACITOR
	C116	QCFA1HZ-103	CAPACITOR
	C117	QCFA1EZ-104	CAPACITOR
	C118	NFV31CJ-473AY	M CAPACITOR
	C119	QEN61AM-476	NP E CAPACITOR
	C120	QCF81CZ-474	E CAPACITOR
	C121	NFV31CJ-473AY	M CAPACITOR
	C122	QCFA1HZ-103	CAPACITOR
	C123	QCFA1EZ-104	CAPACITOR
	C124	QEN61HM-105	NP E CAPACITOR
	C125	QEF81AM-475	TANTAL CAPACITOR
	C126	QCFA1HZ-103	CAPACITOR
	C127	QCSA1HJ-220	CAPACITOR
	C128	QCSA1HJ-180	CAPACITOR
	C129	QCFA1EZ-104	CAPACITOR
	C130	QCFA1EZ-104	CAPACITOR
	C131	QCSA1HJ-181	CAPACITOR
	C132	QCSA1HJ-180	CAPACITOR
	C133	QCSA1HJ-181	CAPACITOR
	C134	QCFA1EZ-104	CAPACITOR
	C135	QETC1AM-107	E CAPACITOR
	C136	QCFA1HZ-103	CAPACITOR
	C137	QCFA1EZ-104	CAPACITOR
	C138	QCFA1EZ-104	CAPACITOR
	C139	QCFA1HZ-103	CAPACITOR
	C140	QCFA1HZ-103	CAPACITOR
	C141	QETC1AM-107	E CAPACITOR
	C142	QCFA1HZ-103	CAPACITOR
	C143	QCFA1EZ-104	CAPACITOR
	C144	QCFA1HZ-103	CAPACITOR
	C145	QCFA1HZ-103	CAPACITOR
	C146	QETC1AM-107	E CAPACITOR
	C147	QCFA1HZ-103	CAPACITOR
	C148	QCFA1EZ-104	CAPACITOR
	C149	QCFA1EZ-104	CAPACITOR
	C150	QETC1EM-107	E CAPACITOR
	C151	QETC1AM-107	E CAPACITOR
	C152	QETC1EM-107	E CAPACITOR
	C153	QCFA1EZ-104	CAPACITOR
⚠	C154	QCS11HJ-221	CAPACITOR
	C301	QETC1CM-226	E CAPACITOR
	C302	QEF81AM-106	TANTAL CAPACITOR
	C303	QETC1CM-476	E CAPACITOR
	C304	QCSA1HJ-121	CAPACITOR
	C305	QCSA1HJ-471	CAPACITOR
	C306	QCYA1HK-333	CAPACITOR
	C307	QCFA1HZ-103	CAPACITOR
	C308	QCFA1HZ-103	CAPACITOR
	C309	QCFA1HZ-103	CAPACITOR
	C310	QEF81EM-474	TANTAL CAPACITOR
	C311	QCFA1HZ-103	CAPACITOR
	C312	QCFA1HZ-103	CAPACITOR
	C313	QCFA1EZ-104	CAPACITOR
	C314	QCSA1HJ-681	CAPACITOR
	C315	QCYA1HK-122	CAPACITOR
	C316	QCFA1HZ-103	CAPACITOR
	C317	QETC1AM-107	E CAPACITOR
	C318	QCFA1HZ-103	CAPACITOR
	C319	QCFA1EZ-104	CAPACITOR
	C320	QETC1CM-107	E CAPACITOR
	C321	QCFA1HZ-103	CAPACITOR
	C322	QCFA1EZ-104	CAPACITOR
	C323	QETC1CM-107	E CAPACITOR
	C324	QCSA1HJ-391	CAPACITOR
	C325	QEN61EM-335	NP E CAPACITOR
	C331	QEF81AM-106	TANTAL CAPACITOR
	C334	QCFA1HZ-103	CAPACITOR
	C335	QCSA1HJ-221	CAPACITOR
	C336	NFV31CJ-122AY	M CAPACITOR
	C337	QCTA1CH-121	CAPACITOR
	C338	QCFA1HZ-103	CAPACITOR
	C339	QCSA1HJ-221	CAPACITOR
	C340	QCTA1CH-221	CAPACITOR
	C341	QCTA1CH-221	CAPACITOR
	C342	QCFA1HZ-103	CAPACITOR
	C343	QCTA1CH-121	CAPACITOR
	C344	QCYA1HJ-103	CAPACITOR
	C345	QCFA1HZ-103	CAPACITOR
	C346	QCFA1HZ-103	CAPACITOR
	C349	QCTA1CH-820	CAPACITOR
	C350	QCTA1CH-101	CAPACITOR
	C351	QETC1AM-107	E CAPACITOR
	C352	QCFA1HZ-103	CAPACITOR
	C353	QCFA1EZ-104	CAPACITOR
	C363	QCFA1HZ-103	CAPACITOR
	C364	QCSA1HJ-100	CAPACITOR
	C370	QCFA1HZ-103	CAPACITOR
	C374	QCFA1HZ-103	CAPACITOR
	C375	QCFA1HZ-103	CAPACITOR
	C376	QCFA1HZ-103	CAPACITOR
	C377	QCFA1HZ-103	CAPACITOR
	C378	QCFA1HZ-103	CAPACITOR
	C379	QETC1AM-107	E CAPACITOR
	C380	QCFA1HZ-103	CAPACITOR
	C381	QCFA1EZ-104	CAPACITOR
	C382	NFV21CJ-102AY	PP CAPACITOR
	C383	QCFA1HZ-103	CAPACITOR
	C384	NFV31CJ-103AY	M CAPACITOR
	C385	QCTA1CH-150	CAPACITOR
	C386	NFV31CJ-333AY	M CAPACITOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	C387	QCTA1CH-101	CAPACITOR
	C388	QCFA1HZ-103	CAPACITOR
	C389	QCTA1CH-150	CAPACITOR
	C390	QCFA1HZ-103	CAPACITOR
	C391	QCFA1HZ-103	CAPACITOR
	C392	QCFA1HZ-103	CAPACITOR
	C393	QETC1AM-476	E CAPACITOR
	C394	QCFA1HZ-103	CAPACITOR
	C395	QETC1AM-107	E CAPACITOR
	C396	QCFA1HZ-103	CAPACITOR
	C397	QCFA1EZ-104	CAPACITOR
	C398	QETC1AM-107	E CAPACITOR
	C399	QCFA1HZ-103	CAPACITOR
	C400	QCFA1HZ-103	CAPACITOR
	C401	QCFA1HZ-103	CAPACITOR
	C402	QCSA1HJ-330	CAPACITOR
	C403	QCSA1HJ-330	CAPACITOR
	C404	QCYA1HK-152	CAPACITOR
	C405	QCSA1HJ-561	CAPACITOR
	C406	QCFA1HZ-103	CAPACITOR
	C407	NFV31CJ-102AY	M CAPACITOR
	C408	QETC1AM-107	E CAPACITOR
	C409	QCFA1HZ-103	CAPACITOR
	C410	QCFA1EZ-104	CAPACITOR
	C411	QETC1AM-107	E CAPACITOR
	C412	QCFA1HZ-103	CAPACITOR
	C413	QCFA1HZ-104	CAPACITOR
	C414	NFV31CJ-122AY	M CAPACITOR
	C415	NFV31CJ-122AY	M CAPACITOR
⚠	C416	QCS11HJ-101	CAPACITOR
⚠	C417	QCS11HJ-101	CAPACITOR
	C501	QCFA1HZ-103	CAPACITOR
	C502	QCTA1CH-121	CAPACITOR
	C503	QCTA1CH-820	CAPACITOR
	C504	QCFA1HZ-103	CAPACITOR
	C505	QCFA1HZ-103	CAPACITOR
	C506	QCTA1CH-820	CAPACITOR
	C507	QCFA1HZ-103	CAPACITOR
	C508	QCFA1HZ-103	CAPACITOR
	C509	QETC1AM-107	E CAPACITOR
	C510	QCFA1HZ-103	CAPACITOR
	C511	QCFA1EZ-104	CAPACITOR
	C512	QCFA1EZ-104	CAPACITOR
	C513	QCFA1EZ-104	CAPACITOR
	C514	QCFA1EZ-104	CAPACITOR
	C515	QCSA1HJ-3R0	CAPACITOR
	C516	QCTA1CH-101	CAPACITOR
	C517	QCFA1EZ-104	CAPACITOR
	C518	QCFA1EZ-104	CAPACITOR
	C519	QCFA1EZ-104	CAPACITOR
	C520	QCTA1CH-101	CAPACITOR
	C521	QCSA1HJ-3R0	CAPACITOR
	C522	QCFA1HZ-103	CAPACITOR
	C523	QETC1CM-107	E CAPACITOR
	C524	QCFA1HZ-103	CAPACITOR
	C525	QCFA1EZ-104	CAPACITOR
	C526	QCFA1HZ-103	CAPACITOR
	C527	QCFA1HZ-103	CAPACITOR
	C528	QCFA1HZ-103	CAPACITOR
	C529	QCFA1HZ-103	CAPACITOR
	C530	QCFA1HZ-103	CAPACITOR
	C531	QCFA1HZ-103	CAPACITOR
	C532	QCFA1HZ-103	CAPACITOR
	C533	QCFA1HZ-103	CAPACITOR
	C534	QETC1AM-107	E CAPACITOR
	C535	QCFA1HZ-103	CAPACITOR
	C536	QCFA1EZ-104	CAPACITOR

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	C571	QEN61CM-106	NP E CAPACITOR
	C572	QCFA1HZ-103	CAPACITOR
	C573	QCFA1HZ-103	CAPACITOR
	C574	QCFA1HZ-103	CAPACITOR
	C575	QCSA1HJ-470	CAPACITOR
	C576	QCFA1EZ-104	CAPACITOR
	C577	NFV21CJ-102AY	PP CAPACITOR
	C578	QCFA1HZ-103	CAPACITOR
	C579	NFV21CJ-103AY	PP CAPACITOR
	C580	QCFA1EZ-104	CAPACITOR
	C581	QCFA1EZ-104	CAPACITOR
	C582	QCTA1CH-150	CAPACITOR
	C583	NFV31CJ-393AY	M CAPACITOR
	C584	QETC1AM-107	E CAPACITOR
	C585	QCFA1HZ-103	CAPACITOR
	C586	QCFA1EZ-104	CAPACITOR
	C588	QCYA1HK-472	CAPACITOR
	C589	QCFA1HZ-103	CAPACITOR
	C590	QCTA1CH-470	CAPACITOR
	C591	QCTA1CH-820	CAPACITOR
	C592	QCTA1CH-820	CAPACITOR
	C593	QCSA1HJ-470	CAPACITOR
	C594	QCFA1HZ-103	CAPACITOR
	C597	QETC1AM-107	E CAPACITOR
	C598	QCFA1HZ-103	CAPACITOR
	C599	QCFA1EZ-104	CAPACITOR
	C600	QETC1AM-107	E CAPACITOR
	C601	QCFA1HZ-103	CAPACITOR
	C602	QCFA1EZ-104	CAPACITOR
	C603	QCZ0214-103	CAPACITOR
⚠	C604	QCS11HJ-560	CAPACITOR
⚠	C605	QCS11HJ-560	CAPACITOR
⚠	C606	QCS11HJ-560	CAPACITOR
⚠	C607	QCS11HJ-560	CAPACITOR
	L1	PGZ01563-2R7	COIL
	L101	YU41134-470JY	COIL
	L102	YU41134-100JY	COIL
	L103	YU41134-101J	COIL
	L104	YU41134-100JY	COIL
	L105	YU41134-221JY	COIL
	L301	YU41134-151JY	COIL
	L302	YU41134-470JY	COIL
	X1	PGZ01566	CRYSTAL RESONATOR
	X2	PGZ01565	CXO
⚠	X3	PU55407	RESONATOR
	SW1	QSS1K41-L01	DIP SW
⚠	K301	PGZ00627Z	FERRATE BEADS
⚠	K302	PGZ00627Z	FERRATE BEADS
⚠	K502	PGZ00627Z	FERRATE BEADS
	SLD1	PRD30255	SHIELD CAP,FOR SLD4
	SLD2	PRD30255	SHIELD CAP,FOR SLD5
	SLD3	PRD30255	SHIELD CAP,FOR SLD6
	SLD4	PRD30254	SHIELD CASE,FOR SLD1
	SLD5	PRD30254	SHIELD CASE,FOR SLD2
	SLD6	PRD30254	SHIELD CASE,FOR SLD3
	SLD7	PRD30781-02-03	SHIELD PLATE
	GND1	PGZ00587-00	TEST POINT
	GND2	PGZ00587-00	TEST POINT
	GND3	PGZ00587-00	TEST POINT
	GND4	PGZ00587-00	TEST POINT
	GND5	PGZ00587-00	TEST POINT

#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	GND6	PGZ00587-00	TEST POINT
	GND7	PGZ00587-00	TEST POINT
	GND8	PGZ00587-00	TEST POINT
	TP1	PGZ01015	TEST PIN
	TP2	PGZ01015	TEST PIN
	TP3	PGZ01015	TEST PIN
	TP4	PGZ01015	TEST PIN
	TP5	PGZ01015	TEST PIN
	TP6	PGZ01015	TEST PIN
	TP7	PGZ01015	TEST PIN
	TP8	PGZ01015	TEST PIN
	TP9	PGZ01015	TEST PIN
	TP21	PGZ01015	TEST PIN
	TP22	PGZ01015	TEST PIN
	TP23	PGZ01015	TEST PIN
	TP24	PGZ01015	TEST PIN
	TP25	PGZ01015	TEST PIN
	TP26	PGZ01015	TEST PIN
	TP28	PGZ01015	TEST PIN
	TP29	PGZ01015	TEST PIN
	TP30	PGZ01015	TEST PIN
	TP41	PGZ01015	TEST PIN
	TP42	PGZ01015	TEST PIN
	TP46	PGZ01015	TEST PIN
	TP47	PGZ01015	TEST PIN
	TP48	PGZ01015	TEST PIN
	TP50	PGZ01015	TEST PIN
	CN1	PGZ00421-64	MALE CONNECTOR
⚠	CP1	ICP-F10	CIRCUIT PROTECTOR
⚠	CP2	ICP-F10	CIRCUIT PROTECTOR

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* 6. REAR 4 BOARD ASSEMBLY <74> *

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#⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	PWBA	PRK20135A-01	REAR 4 PWB ASY
	IC1	BA10324	IC
	OR	BA10324A	IC
	IC2	BU4551BF	IC
	IC3	UPD4066BG	IC
	Q1	DTC144EK	TRANSISTOR
	Q2	DTC144EK	TRANSISTOR
	Q3	FMG2	TRANSISTOR
	Q4	DTC144EK	TRANSISTOR
	D1	RD16ES	ZENER DIODE
	D2	RD16ES	ZENER DIODE
	D3	RD16ES	ZENER DIODE
	D4	RD16ES	ZENER DIODE
	D5	RD16ES	ZENER DIODE
	D6	RD9.1EW	ZENER DIODE
	D7	RD9.1EW	ZENER DIODE
	D8	RD9.1EW	ZENER DIODE
	D9	RD9.1EW	ZENER DIODE
	D10	DAP202K	DIODE
	D11	DAN202K	DIODE
	D12	DAN202K	DIODE
	R1	QRSA08J-102YN	RESISTOR
	R2	QRSA08J-472YN	RESISTOR
	R3	QRSA08J-102YN	RESISTOR
	R4	QRSA08J-472YN	RESISTOR
	R5	QRSA08J-102YN	RESISTOR
	R6	QRSA08J-472YN	RESISTOR
	R7	QRSA08J-272YN	RESISTOR
	R8	QRSA08J-102YN	RESISTOR
	R9	QRSA08J-222YN	RESISTOR
	R10	QRSA08J-472YN	RESISTOR
	R11	QRSA08J-223YN	RESISTOR
	R12	QRSA08J-223YN	RESISTOR
	R14	QRSA08J-153YN	RESISTOR
	R15	QRSA08J-103YN	RESISTOR
	R16	QRSA08J-223YN	RESISTOR
	R17	QRSA08J-153YN	RESISTOR
	R18	QRSA08J-103YN	RESISTOR
	R19	QRSA08J-223YN	RESISTOR
	R20	QRSA08J-223YN	RESISTOR
	B2	QWY124-0.4M	BUS WIRE
	B6	QWY123-0.2M	BUS WIRE
	B8	PU59499-3	BUS WIRE
	C1	QER41HM-105	E CAPACITOR
	C2	QCFA1EZ-104	CAPACITOR
	C3	QER41HM-105	E CAPACITOR
	C4	QCFA1EZ-104	CAPACITOR
	C5	QER41HM-105	E CAPACITOR
	C6	QCFA1EZ-104	CAPACITOR
	C7	QER41HM-105	E CAPACITOR
	C8	QCFA1EZ-104	CAPACITOR
	C9	QCFA1EZ-104	CAPACITOR
	C10	QER41CM-476	E CAPACITOR
	K1	PGZ00354	FERRATE BEADS
	K2	PGZ00354	FERRATE BEADS
	K3	PGZ00354	FERRATE BEADS
	CN1	PU58844-110	CONNECTOR
	CN2	PU58844-102	CONNECTOR
	CN3	PU58844-106	CONNECTOR
	CN4	PU58844-108	CONNECTOR
	CN5	PU58844-104	CONNECTOR
	CN7	P870-12A4A2NNCN	WIRE

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